# Health and Social Service Workforce in Alberta, 1990

Alberta

HEALTH AND SOCIAL SERVICES
DISCIPLINES COMMITTEE

91-02636/

# Health and Social Service Workforce in Alberta, March 31, 1990

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December, 1990

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## 1. Introduction

The annual survey of health and social service employers was conducted on March 31, 1990 by the Alberta Health and Social Services Disciplines Committee. This survey, which has been carried out since 1979, collects information on the health and social service workforce of Alberta. The survey requests employers to provide specific information on full-time and part-time permanent personnel, vacant positions, resignations, casual/contract personnel, and employer recruitment difficulties. The response by employers to the 1990 survey was generally excellent; a total of 5,404 employers were mailed the questionnaires and of these, 98.1 percent responded. Some of the major highlights from the survey are provided below.

## 2. Highlights of the Report

### Permanent Personnel

- The employers surveyed reported a total of 85,880 full-time and part-time permanent personnel in 1990. This represents an overall increase of 5,625 (7.0%) permanent personnel from 1989.
- Slightly over one-half (53.0%) of all the permanent personnel reported were employed in community settings. The remaining 47.0 percent were employed in hospitals, nursing homes, and correctional centres.
- Registered nurses, who were the largest occupational group included in the survey, increased by 7.5 percent, from 17,810 (1989) to 19,152 (1990).
- Registered nursing assistants also showed a substantial increase, 13.4 percent, in the number of permanent personnel from 1989 (4,117) to 1990 (4,668).
- As a group, diagnostic/therapeutic personnel grew in number by 8.2 percent from 1989 to 1990. Substantial percentage increases in the number of permanent personnel were seen for electroencephalographic technicians (41.2%), electrocardiographic technicians (29.2%), respiratory therapists (19.1%), and diagnostic medical sonographers (18.4%).
- Dental personnel also experienced an above average growth rate of 8.4 percent from 1989 to 1990. The number of dental hygienists increased by 5.8 percent. Almost all of the increase in the number of dental hygienists was attributable to the growth in part-time personnel.
- The rehabilitation occupations experienced a modest growth of 4.4 percent in the number of permanent personnel, from 6,404 (1989) to 6,686 (1990). Within this occupational category, exceptionally high percentage increases were seen for occupational therapy assistants (48.6%) and speech therapy assistants (31.3%). Other notable percentage increases were observed for clinical audiologists (12.5%), occupational therapists (10.2%), and physical therapists (7.3%).
- The number of permanent day care personnel grew by 5.6 percent, from 6,221 (1989) to 6,570 (1990).
- Other notable percentage increases in the number of permanent personnel were seen for home care personnel (17.1%), emergency medical technicians-paramedic (15.7%), correctional service workers (14.3%), emergency medical technicians-ambulance (12.4%), psychologists (11.1%), pharmacists (9.0%), and public health inspectors (8.6%).
- Social work/service personnel was one of the few occupational categories to show a decrease in the number of personnel from 1989 (3,504) to 1990 (3,348). The 4.5 percent decline in the number of social work/service personnel in 1990 contrasts sharply to the substantial growth observed for this occupational category in 1989 (14.2%).

### Part-time Personnel

- The proportion of part-time to full-time personnel in 1990 was 33.7 percent. This represents only a marginal increase in the percentage of part-time from 1989 (33.0%).
- Particularly high percentages of part-time personnel were seen for home care personnel (78.1%), combined laboratory x-ray technicians (48.1%), dental hygienists (51.4%), 'other' nursing staff (47.2%), registered nursing assistants (46.5%), and registered nurses (41.6%).
- For many occupations, the proportion of part-time varied substantially across large urban, small urban, large town, and rural areas. Generally, the percentage of part-time personnel tended to be higher in rural areas compared to urban centres.

### Vacancy Rates

- The substantial decline in the number of vacant positions and the vacancy rate was one of the major findings of the 1990 employer survey. Overall, the number of vacant full-time equivalent positions reported decreased from 3,839 (1989) to 2,980 (1990). The corresponding vacancy rate declined from 5.4 percent (1989) to 4.0 percent (1990).
- Registered nurses experienced the largest vacancy rate decline from 1989 (8.2%) to 1990 (5.0%). Overall, the number of vacant positions for this occupational category dropped from 1,265 (1989) to 794 (1990).

- The vacancy rate for registered nursing assistants also decreased from 5.4 percent (1989) to 3.0 percent (1990).
- Dental personnel had the highest overall vacancy rate, 7.1 percent, of any occupational group surveyed. Within this occupational group, dental hygienists had the highest number of full-time equivalent vacant positions (132) and the highest vacancy rate (18.5%).
- As a group, the rehabilitation occupations experienced a noticeable vacancy rate decline from 9.4 percent (1989) to 6.4 percent (1990). However, some specific rehabilitation occupations continued to have relatively high vacancy rates in 1990; these included, occupational therapists (14.9%), physical therapists (14.3%), and speech therapists (13.8%).
- Other comparatively high vacancy rates were observed for social service aides (8.1%), medical records administrators /librarians (7.1%), public health inspectors (6.9%), paid emergency medical technicians-ambulance (6.6%), social workers with a master's degree in social work (6.2%), respiratory therapists (5.9%), home care personnel (5.2%), and psychologists (5.0%).
- There was a noticeable variation in vacancy rates across large urban, small urban, large town, and rural areas. Overall, vacancy rates tended to be higher in rural areas compared to large urban centres.

### Turnover Rates

- There was little change in the total turnover rate for all occupations surveyed from 1989 (14.0%) to 1990 (14.5%).
- Day care personnel had an exceptionally high turnover rate of 37.7 percent in 1990. Moreover, this group also experienced the most pronounced turnover rate increase from 1989 (28.5%) to 1990 (37.7%).
- Child/youth care workers continued to have one of the highest turnover rates from 1989 (27.2%) to 1990 (24.9%).
- Higher than average turnover rates in 1990 were also observed for home care personnel (19.2%) and among the rehabilitation occupations (16.6%). Within the rehabilitation category, particularly high turnover rates were seen for prosthetists/orthotists (25.0%), rehabilitation practitioners (22.5%), occupational therapists (19.6%), and physical therapists (17.5%).
- In general, turnover rates tended to be lower in rural areas compared to urban centres. For all occupations combined, turnover rates showed a gradual decrease from large urban centres (15.7%) to rural areas (12.3%).

### Casual/Contract/Temporary/Relief Personnel

- There was a total of 10,251 casual/contract/ temporary /relief personnel reported working during the month of March, 1990. The total monthly mean or average hours worked by these workers was 52.1.
- A total of 3,883 full-time workers would be needed to account for the total 466,182 casual/contract hours reported during the month of March.
- Overall, the proportion of casual personnel to permanent personnel during the month of March was 11.9 percent. Two of the highest percentages of casual personnel were reported for registered nurses (36.8%) and registered nursing assistants (22.1%).

### Recruitment Difficulties

- Employers were asked to identify the positions that had been vacant three months or longer on March 31, 1990, while recruitment activities had been in progress. Of the 1,078 employers who reported a vacancy on March 31 (excluding day care centres), 503 or 46.7 percent reported that one or more vacancies had been vacant for three months or longer. This is slightly higner than the percentage of three month vacancies reported in 1989 (45.0%).
- High percentages of three month vacancies were observed for speech therapists (80.0%), dental hygienists (77.6%), registered psychiatric nurses (77.6%), physical therapists (68.0%), psychologists (56.7%), and pharmacists (55.4%).
- There was considerable variation in the distribution of three month vacancies across urban centres, large towns, and rural areas. Generally, the percentage of three month vacancies tended to be higher in rural areas compared to urban centres.
- Employers were also asked whether they expected difficulties in recruiting health and social service personnel over the next year. Among the employers who were asked this question, 1,118 (23.9%) indicated that they did anticipate recruitment difficulties over the following year.
- A relatively high percentage of employers anticipated difficulties in recruiting registered nurses (65.8%), dental hygienists (58.9%), physical therapists (48.1%), emergency medical technicians (paramedic-38.5% and ambulance-36.0%), occupational therapists (32.4%), rehabilitation practitioners (30.7%), speech therapists (27.6%), and respiratory therapists (26.2%).
- The majority of employers cited a shortage of available personnel and undesirable location as the primary reasons for the anticipated recruitment difficulties.

## 3. Survey Methodology

The mailing lists used to identify employers in the 1989 survey were verified and updated for the 1990 employer survey. The mailing list utilized for employers of occupational health personnel, in particular, was extensively updated.[1] A total of 5,404 employers of health and social service personnel were identified in the final 1990 mailing list.

These employers were mailed a survey form, along with a cover letter, and a pre-stamped envelope during the month of March, 1990. When applicable, a letter of endorsement supporting the survey from a professional association was also included in the mail-out package.

The cover letter requested employers to return the survey by May 1, 1990. Additional mail-outs and telephone follow-ups were conducted as necessary for those employers who had not responded by May 16, 1990.

The study utilized 22 different survey forms. These forms varied primarily in terms of the occupations included in the questionnaires. For each survey form, only the occupations applicable to a particular health and social service employer group were listed. With the exception of the survey forms mailed to ambulance operators, day care centres, and post-secondary institutions, each questionnaire was divided into three main sections.

SECTION A included a list of health and social service occupations and their definitions. For each occupation, the employer was asked to indicate the number of full-time and part-time personnel employed on March 31, 1990, the number of full-time and part-time vacant positions on March 31, 1990, and the total number of full-time and part-time resignations which occurred during the period between April 1, 1989 and March 31, 1990. As mentioned earlier, the occupations listed in Section A were tailored to specific employer groups. A space was provided for the employer to specify other occupations not included in the list.

SECTION B asked the employer whether any casual, contract, temporary, or relief personnel were employed between March 1, 1990 and March 31, 1990. This question differed from prior surveys, when employers were requested to indicate the total number of casual/contract personnel employed over a 12 month time period.[2] Data on casual/contract personnel between 1990 and prior years will not be comparable because of the reduction in the time frame measurement in 1990 from one year to one month. Those employers that indicated they did employ casual/contract personnel during the month of March, were requested further to specify the occupations for which casual/contract personnel were employed, the total number of casual/contract personnel employed within these occupations, and the total number of hours worked by casual/contract personnel for each occupation. To encourage employer response, a number of occupations were explicitly listed on the questionnaire. The occupations listed in Section B were the same for all employers: registered nurses, registered nursing assistants, physical therapists, occupational therapists, psychologists, social workers, dietitians/nutritionists, pharmacists, audiologists/speech pathologists, and dental hygienists. A category for 'other' occupations was also provided. Section B was not included in the survey forms given to day care centres, ambulance operators, and post-secondary institutions.

SECTION C was divided into two parts, both of which collected information on difficult to recruit occupations. Part 1 was designed to quantify employer recruitment difficulties. Employers were asked whether any of the vacant positions reported in Section A had been vacant three months or longer while recruitment activities had been in progress. For these long-term vacancies, employers were requested to specify the occupations involved as well as the number of full-time and part-time positions that had been vacant for three months or longer within each of these occupations. Part 2 asked whether the employer anticipated difficulties in recruiting health and social service personnel in the next year. Employers were requested to list the occupations for which they anticipated recruitment difficulties and the reasons for the anticipated staffing difficulty. Section C was not included in the survey form mailed to day care centres.

In all, there were 139 occupational categories included in the survey. These occupations were defined by a number of different criteria including duties performed, education or training, and, for the occupations with a reserved title, registration with the appropriate governing body. Some notable occupational groups, such as physicians, dentists, chiropractors, optometrists, and podiatrists, which collect registration data through

[1] A total of 15 new employers of occupational health personnel were added to the 1990 survey mailing list.

[2] The time frame for the measurement of casual/contract personnel was reduced to one month for a number of reasons: to increase the ease of response; to increase the accuracy of supplied casual/contract data; and finally, to allow for an analysis of the proportion of permanent to casual/contract personnel.

their own professional associations, were not included in the survey.

Instructions for completing the survey were given on the first page of the survey form. Employers were instructed to apply the following definitions when completing the survey:

| | |
|---|---|
| Persons employed: | all individuals employed by your organization on a regular full-time or part-time basis |
| Full-time: | thirty hours or more per week |
| Part-time: | less than thirty hours per week |
| Vacancies: | positions for which personnel are actively being recruited as of March 31, 1990. |
| Resignations: | individuals who terminated employment during the one year period from April 1, 1989 to March 31, 1990. Do not include persons who have been promoted or transferred. |
| Casual, Temporary, Contract, or Relief Personnel: | individuals who worked on-call, relief, or on a temporary basis and did not fill a regular full-time and/or part-time position. These individuals were paid directly through your organization or through an outside agency. |

## 4. Survey Response Rates

The survey of health and social service personnel working in Alberta was mailed to 5,404 employers. A total of 5,303 of these employers responded, resulting in an overall response rate of 98.1 percent.

Table 1 provides a summary of the response rate for each employer group surveyed. In general, response rates to the survey were excellent. Response rates of 100 percent were achieved for hospitals and nursing homes, which represent two of the largest employers of health and social service personnel included in the survey. The majority of the other employers attained response rates of between 97.0 and 100 percent. Somewhat lower response rates were observed for Alberta Alcohol and Drug Abuse Commission/Family and Community Support Services (AADAC/FCSS) and psychologists in private practice.

A response failure by an employer will lower the personnel population figures reported in the survey data. However, Appendix 1 indicates that for most of the groups surveyed, the effect of employer non-response on overall population figures was quite minimal. In total, the table estimates that only 1.1 percent or 967 of health and social service personnel were unreported due to survey non-response. The two employer groups which had notable percentages of unreported personnel were AADAC/FCSS (5.9%) and community agencies (4.3%).

## 5. Permanent Personnel

Employers reported a total of 85,880 full-time and part-time permanent health and social service personnel in 1990. Overall, the number of permanent personnel increased by 5,625 (7.0%) from 1989 to 1990. Appendix 2 provides a detailed description of the number of full-time and part-time permanent personnel, as well as the corresponding full-time equivalent positions for each occupation included in the survey.

### 5.1 Permanent Personnel by Occupational Category

Table 2 provides a comparative summary of full-time and part-time personnel by occupational group for 1989 and 1990. The specific occupations included within each occupational group are identified in Appendix 2.

The total number of **registered nurses** grew 7.5 percent, from 17,810 in 1989 to 19,152 in 1990. The largest percentage increases in the number of registered nurses were seen in the following specialties: intravenous therapy (107.1%), nursing education (33.5%), psychiatric ward (30.1%), and administration (22.5%).

**Registered nursing assistants** increased by 13.4 percent from 4,117 (1989) to 4,668 (1990), accounting for the majority of the growth in the number of non-RN nursing personnel. Most of the other non-RN nursing occupations showed a general decline in the number of permanent personnel. The most notable declines were seen for operating room technicians who declined in number by 33.6 percent and registered psychiatric nurses who decreased by 7.2 percent.[1]

The number of permanent personnel in **diagnostic/therapeutic occupations** grew by 8.2 percent, from 5,634 (1989) to 6,098 (1990). Noteworthy percentage increases in the number of personnel were seen for electroencephalographic technologists (41.2%), electrocardiographic technologists (29.2%), respiratory therapists (19.1%), and diagnostic medical sonographers (18.4%).

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[1]The decline in the number of registered psychiatric nurses is likely due to the planned closure of the psychiatric nursing school at Alberta Hospital (Edmonton) in June, 1991.

TABLE 1. SURVEY RESPONSE RATE BY EMPLOYER GROUP
MARCH 31, 1990

| EMPLOYER GROUP | NUMBER EMPLOYERS RESPONDING | NUMBER OF EMPLOYERS CONTACTED | RESPONSE RATE (%) |
|---|---|---|---|
| AADAC/FCSS* | 165 | 175 | 94.3 |
| AMBULANCE OPERATORS | 116 | 119 | 97.5 |
| COMMUNITY AGENCIES | 270 | 280 | 96.4 |
| CORRECTIONAL CENTRES | 63 | 63 | 100.0 |
| DAYCARE CENTRES | 620 | 641 | 96.7 |
| DENTAL LABORATORIES | 91 | 93 | 97.8 |
| DENTISTS' OFFICES | 864 | 882 | 98.0 |
| DENTURE CLINICS | 155 | 156 | 99.4 |
| DEPARTMENT OF HEALTH | 60 | 60 | 100.0 |
| DEPT. OF SOCIAL SERVICES | 90 | 91 | 98.9 |
| GROUP HOMES | 94 | 94 | 100.0 |
| HEALTH UNIT OFFICES | 121 | 126 | 96.0 |
| HOSPITALS, 0-25 BEDS | 33 | 33 | 100.0 |
| HOSPITALS, 26-49 BEDS | 33 | 33 | 100.0 |
| HOSPITALS, 50-99 BEDS | 25 | 25 | 100.0 |
| HOSPITALS, 100-299 BEDS | 12 | 12 | 100.0 |
| HOSPITALS, 300+ BEDS | 8 | 8 | 100.0 |
| HOSPITALS, AUXILIARY | 46 | 46 | 100.0 |
| HOSPITALS, MULTI-LEVEL FACILITIES** | 31 | 31 | 100.0 |
| HOSPITALS, PSYCHIATRIC | 2 | 2 | 100.0 |
| HW CANADA/INDIAN AFFAIRS | 34 | 34 | 100.0 |
| MEDICAL CLINICS | 288 | 290 | 99.3 |
| MEDICAL LABORATORIES | 152 | 155 | 98.1 |
| NURSING HOMES | 68 | 68 | 100.0 |
| OPHTHALMIC DISPENSERS | 219 | 220 | 99.5 |
| OPHTHALMOLOGISTS | 60 | 60 | 100.0 |
| OPTOMETRISTS | 155 | 157 | 98.7 |
| PHARMACIES | 665 | 671 | 99.1 |
| PHYSICAL THERAPISTS | 142 | 142 | 100.0 |
| POST-SECONDARY INSTITUTIONS | 37 | 37 | 100.0 |
| PRIVATE INDUSTRY | 109 | 110 | 99.1 |
| PSYCHOLOGISTS | 333 | 348 | 95.7 |
| SCHOOL BOARDS | 142 | 142 | 100.0 |
| TOTALS | 5,303 | 5,404 | 98.1 |

*Alberta Alcohol and Drug Abuse Commission/Family and Community Support Services.
**Multi-level Hospitals include facilities which have a combination of at least two of the following bed types: acute care beds, auxiliary beds, and/or nursing home beds.

TABLE 2. NUMBER AND PERCENTAGE OF PERMANENT PERSONNEL EMPLOYED ON A FULL-TIME AND PART-TIME BASIS, BY OCCUPATIONAL GROUPS, MARCH 31, 1989 AND 1990

| OCCUPATIONAL GROUP | 1989 | | | | 1989 | 1990 | | | | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|
| | FULL-TIME | | PART-TIME | | | FULL-TIME | | PART-TIME | | |
| | NUMBER | PERCENT | NUMBER | PERCENT | TOTAL | NUMBER | PERCENT | NUMBER | PERCENT | TOTAL |
| AMBULANCE PERSONNEL (PAID AND VOLUNTEER) | 948 | 44 | 1,213 | 56 | 2,161 | 1,019 | 46 | 1,215 | 54 | 2,234 |
| CHILD/YOUTH CARE PERSONNEL | 1,376 | 75 | 449 | 25 | 1,825 | 1,423 | 79 | 372 | 21 | 1,795 |
| CHILD DAY CARE PERSONNEL | 5,218 | 84 | 1,003 | 16 | 6,221 | 5,416 | 82 | 1,154 | 18 | 6,570 |
| CORRECTIONAL PERSONNEL | 1,792 | 97 | 52 | 3 | 1,844 | 1,907 | 95 | 90 | 5 | 1,997 |
| DENTAL PERSONNEL | 2,802 | 77 | 846 | 23 | 3,648 | 3,013 | 76 | 941 | 24 | 3,954 |
| DIETARY PERSONNEL | 2,114 | 51 | 2,044 | 49 | 4,158 | 2,159 | 49 | 2,234 | 51 | 4,393 |
| EYE CARE PERSONNEL* | 871 | 82 | 188 | 18 | 1,059 | 978 | 80 | 251 | 20 | 1,229 |
| HEALTH RECORDS PERSONNEL | 582 | 70 | 255 | 30 | 837 | 651 | 72 | 258 | 28 | 909 |
| HOME CARE PERSONNEL | 378 | 22 | 1,341 | 78 | 1,719 | 440 | 22 | 1,573 | 78 | 2,013 |
| DIAGNOSTIC/THERAPEUTIC PERSONNEL | 4,014 | 71 | 1,620 | 29 | 5,634 | 4,294 | 70 | 1,804 | 30 | 6,098 |
| REGISTERED NURSE PERSONNEL | 10,389 | 58 | 7,421 | 42 | 17,810 | 11,181 | 58 | 7,971 | 42 | 19,152 |
| NURSING PERSONNEL (NON-RN) | 5,670 | 55 | 4,564 | 45 | 10,234 | 6,124 | 55 | 4,971 | 45 | 11,095 |
| OCCUPATIONAL HEALTH PERSONNEL* | 57 | 98 | 1 | 2 | 58 | 110 | 95 | 6 | 5 | 116 |
| PHARMACEUTICAL PERSONNEL | 1,784 | 66 | 910 | 34 | 2,694 | 1,923 | 64 | 1,059 | 36 | 2,982 |
| PSYCHOLOGICAL PERSONNEL | 1,013 | 66 | 515 | 34 | 1,528 | 1,059 | 63 | 616 | 37 | 1,675 |
| PUBLIC HEALTH PERSONNEL | 229 | 95 | 12 | 5 | 241 | 236 | 92 | 21 | 8 | 257 |
| REHABILITATION PERSONNEL | 4,655 | 73 | 1,749 | 27 | 6,404 | 4,828 | 72 | 1,858 | 28 | 6,686 |
| SOCIAL WORK/SERVICE PERSONNEL | 3,159 | 90 | 345 | 10 | 3,504 | 2,966 | 89 | 382 | 11 | 3,348 |
| PROGRAM ADMIN/CLERICAL SUPPORT | 6,503 | 77 | 1,930 | 23 | 8,433 | 6,830 | 77 | 2,069 | 23 | 8,899 |
| OTHER HEALTH CARE/SERVICE PERSONNEL | 188 | 77 | 55 | 23 | 243 | 346 | 72 | 132 | 28 | 478 |
| TOTAL | 53,742 | 67 | 26,513 | 33 | 80,255 | 56,903 | 66 | 28,977 | 34 | 85,880 |

*The increase in the number of occupational health personnel and eye care personnel may be due, in part, to the update and revision of the mailing lists for employers of these disciplines.

The number of personnel in **dental occupations** grew by 8.4 percent in 1990. Dental hygienists, in particular, increased by 5.8 percent from 737 in 1989 to 780 in 1990. Almost all of the growth in the number of dental hygienists was due to the increase in the number of part-time personnel; full-time dental hygienists increased by only one in number while part-time personnel increased by 42.

Overall, the 4.4 percent increase in the total number of **rehabilitation personnel** was well below the 7.0 percent increase observed for all health and social service personnel combined. However, substantial percentage increases for specific occupations within the rehabilitation category were observed for clinical audiologists (12.5%), occupational therapists (10.2%), and physical therapists (7.3%). Exceptionally high percentage increases in the number of personnel were seen for occupational therapy assistants/aides (48.6%) and speech therapy assistants/aides (31.3%). In contrast to these general increases, the number of speech therapists declined by 0.9 percent from 1989 to 1990.

The percentage increase observed for **day care personnel** (5.6%) was also below the average percentage increase (7.0%) observed for all health and social service personnel combined. Within this occupational category, the largest percentage increases in the number of personnel occurred for day care directors with a Bachelor of Education degree (56.4%) and day care workers with a degree unrelated to child care (55.3%).

Other noteworthy percentage increases in the number of personnel were observed for home care personnel (17.1%), emergency medical technicians-paramedic (15.7%), correctional service workers (14.3%), emergency medical technicians-ambulance (12.4%), psychologists (11.1%), pharmacists (9.0%), and public health inspectors (8.6%).

**Social work and social service** personnel was one of the few occupational groups to show a decline in the number of permanent personnel from 1989 to 1990. Overall, the number of social work and social service personnel decreased by 4.5 percent from 3,504 to 3,348. This contrasts sharply to the 14.2 percent growth observed for this occupational group in the year prior, from 1988 to 1989.

The only other occupational group to show a decline in the number of personnel from 1989 to 1990 was **child/youth care personnel** who decreased in number by 1.6 percent.

### 5.2 Distribution of Permanent Personnel Among Selected Occupational Groups

Figure 1 illustrates the percentage distribution of health and social service personnel by occupational group. It should be emphasized that percentages were based only on the occupations included in the survey. Major occupational groups, most notably, physicians, dentists, chiropractors, optometrists, and podiatrists were not surveyed and were therefore not considered in the percentage calculations.

Figure 1 clearly indicates that of the occupations surveyed, registered nurses represented the largest percentage (22.3%), of the personnel reported by employers. Personnel in non-RN nursing occupations also accounted for a substantial proportion (12.9%). Altogether, personnel in nursing related occupations accounted for over 35 percent of the health and social service workforce reported in the survey. A smaller, but noteworthy, percentage of personnel was reported in rehabilitation occupations (7.8%), day care occupations (7.7%), and laboratory/diagnostic occupations (7.1%). The relative distribution of personnel by occupation in 1990 did not change significantly from the percentage distribution observed in 1989.

### 5.3 Percent Part-time Permanent Personnel

From 1989 to 1990, the number of part-time personnel increased by 2,464 while the number of full-time personnel grew by 3,161. The relative percentage of part-time to full-time personnel remained virtually unchanged from 1989 (33.0%) to 1990 (33.7%).

Figure 2 displays the percentage of part-time personnel among selected health and social service occupations. The percentage of part-time personnel may be over-estimated as the same individual may work part-time for more than one employer. This double counting is more likely to occur for occupations which have a high demand for part-time personnel, such as dental hygienists.

Some other occupations not presented in Figure 2 which also had high percentages of part-time personnel include home care personnel[1] (78.1%), speech therapy assistants/aides (68.2%), food service workers (56.2%), and 'other' nursing staff[2] (47.2).

Comparatively low percentages of part-time personnel were seen for dialysis technicians (0.0%), medical

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[1]Home care personnel includes homemakers, homehelpers, and personal care attendants.

[2]Other nursing staff includes nursing aides, nursing attendants, mental deficiency nurses, and any nursing staff who are not registered nurses, graduate nurses, psychiatric nurses, nursing assistants, porters, or unit ward clerks but work in direct care.

**Figure 1.**

## Percentage of Permanent Personnel in Selected Health and Social Service Occupational Groups

**March 31, 1990**

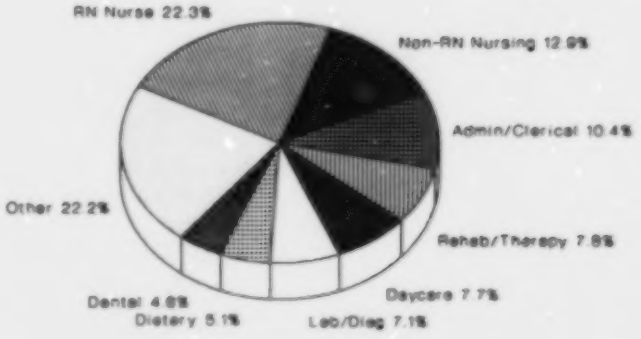
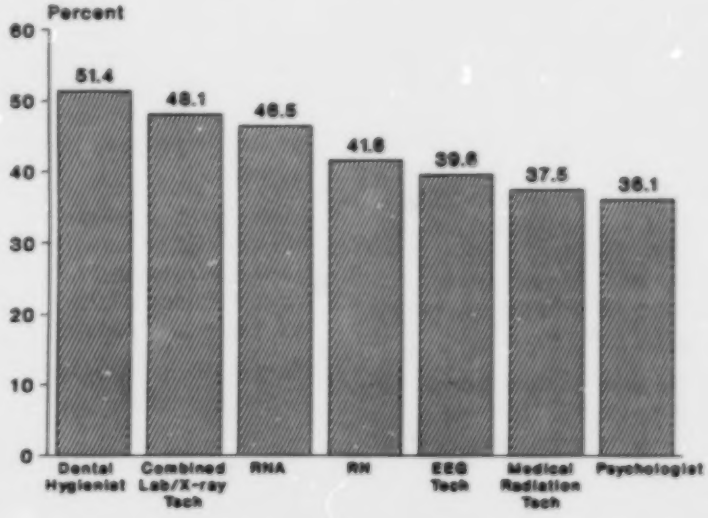



**Figure 2.**

## Percent Part-time Personnel Within Selected Health and Social Service Occupations

**March 31, 1990**



laboratory scientists (3.4%), correctional service personnel (4.5%), occupational health personnel (5.2%), certified denturists (5.6%), registered dental technicians (5.9%), prosthetists/orthotists (7.7%), public health personnel (8.2%) and social work/service personnel (11.4%).

Table 3 displays the distribution of part-time personnel across large urban, small urban, large town, and rural areas for selected occupations. For all occupations combined, there was a consistent increase in the proportion of part-time personnel from large urban (31.3%) to rural areas (45.9%). A higher percentage of part-time personnel in rural areas compared to urban centres was the general pattern seen for every occupation listed in Table 3. The most dramatic disparity in the proportion of part-time personnel was observed for occupational therapists where the percentage of part-time increased from 26.3 percent in large urban areas to 80.8 percent in rural areas.

### 5.4 Permanent Personnel per 10,000 Population Ratios

The 7.0 percent growth in permanent health and social service personnel from 1989 to 1990 exceeded the 1.9 percent population growth occurring from June 1, 1989 to June 1, 1990.[1] Table 4 gives a summary of the number of permanent personnel per 10,000 Alberta population for 1989 and 1990.[2] This calculation describes the growth of permanent personnel while controlling for the growth in the population. It should be recognized, however, that the population ratios do not take into consideration changes in the demand for health and social service personnel from year to year. For example, yearly changes in the population age structure. Therefore, yearly increases or decreases in the personnel per 10,000 population ratios should *not* be taken as definitive indicators of 'surpluses' or 'shortages'. The table can best be viewed as a descriptive summary for informed discussion.

For all occupations combined, Table 4 indicates that the number of personnel per 10,000 population increased from 331.22 to 347.72. This translates to an increase of 16.50 health and social service personnel per 10,000 population. The largest increases in the number of personnel per 10,000 population were seen for registered nurses who increased in number by 4.04 per 10,000 population and for non-RN nursing personnel who increased in number by 2.69 per 10,000 population. Overall, the population ratio increases observed for nursing personnel from 1989 to 1990 were greater than the population ratio increases observed in the year prior, from 1988 to 1989.

The only two occupational categories which experienced a decrease in the number of personnel per 10,000 population ratios were social work/service personnel, where the population ratio declined by 0.91, and child/youth care, where the decline was 0.26.

### 5.5 Permanent Personnel per 1,000 Population Ratios by Large Urban, Small Urban, Large Town, and Rural Areas

Table 5 provides a summary of the number of personnel per 1,000 population ratios for 1990 by large urban, small urban, large town, and rural areas. Again, it is important to recognize that the table does not provide sufficient information from which to infer regional disparities or surpluses because the table does not control for differences in the demand for health and social service personnel between different areas.

For all occupations combined, Table 5 indicates that the highest personnel to 1,000 population ratio was in large towns (52.79) while the lowest ratio was in rural areas (21.48). The personnel to 1,000 population ratio showed a general increase from large urban centres to rural areas for ambulance personnel, home care personnel, and public health personnel. A general decline in the personnel to 1,000 population ratio from large urban centres to rural areas was observed for day care personnel, diagnostic/therapeutic personnel, and psychological personnel. For registered nurses, the personnel to 1,000 population ratio in large urban centres was double the ratio observed in rural areas. The difference in the population ratio between large urban centres and rural areas was not as pronounced for non-RN nursing personnel.

## 6. Vacancy Rates

The substantial decline in the number of vacant positions and the vacancy rate was one of the major findings of the 1990 employer survey.[3] Overall, the number of vacant full-time equivalent positions decreased from 3,839 (1989) to 2,980 (1990). The corresponding vacancy rate declined from 5.4 percent (1989) to 4.0 percent (1990). A summary of the number of vacant positions and the vacancy rates in 1990 for

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[1] Source: *Alberta Population Growth, Second Quarter, 1990.* Revised June 1, 1989 and June 1, 1990 population estimates.

[2] The personnel per population ratio was calculated by dividing the total number of permanent personnel within each occupational group by the estimated Alberta population for that year and then multiplying by 10,000.

[3] Vacancy rates were calculated using full-time equivalent positions. In this calculation, a conversion factor of two part-time to one full-time was used to convert part-time positions to full-time equivalent positions. 'Definitions of Terms' in Appendix 2 provides a detailed definition of full-time equivalent positions and vacancy rates.

TABLE 3. PERCENT PART-TIME PERSONNEL FOR SELECTED OCCUPATIONS IN LARGE URBAN, SMALL URBAN, LARGE TOWNS, AND RURAL AREAS* MARCH 31, 1990

| OCCUPATION | PERCENT PART-TIME (%) | | | |
|---|---|---|---|---|
| | LARGE URBAN | SMALL URBAN | LARGE TOWN | RURAL AREA |
| ALL OCCUPATIONS | 31.3 | 30.7 | 38.7 | 45.9 |
| Combined Lab/X-Ray Tech. | 42.2 | 42.3 | 44.1 | 55.3 |
| Dental Hygienists | 47.8 | 56.8 | 67.3 | 64.7 |
| Occupational Therapists | 26.3 | 30.2 | 44.8 | 60.8 |
| Pharmacists | 34.3 | 30.6 | 36.5 | 38.6 |
| Physical Therapists | 32.4 | 25.0 | 39.1 | 59.1 |
| Psychologists | 37.1 | 25.3 | 22.0 | 47.4 |
| Registered Nurses | 39.6 | 41.9 | 47.6 | 49.6 |
| Registered Nursing Asst./Orderlies | 41.0 | 44.9 | 54.2 | 57.2 |

*Large urban, small urban, large towns, and rural areas were defined in terms of the following population figures: LARGE URBAN--population > 70,000 (includes Edmonton (CMA) and Calgary (CMA)); SMALL URBAN--10,000 < population < 70,000; LARGE TOWN--5,000 < population < 10,000; and RURAL AREAS--population < 5,000.

TABLE 4. NUMBER OF PERMANENT PERSONNEL BY OCCUPATION, 1990
AND NUMBER OF PERMANENT PERSONNEL BY OCCUPATION
PER 10,000 POPULATION RATIOS, 1989 AND 1990

| OCCUPATIONAL GROUP | 1990 PERSONNEL | PERSONNEL TO POP'90 RATIO* | PERSONNEL TO POP'89 RATIO** | PERSONNEL TO POP RATIO CHANGE*** |
|---|---|---|---|---|
| AMBULANCE PERSONNEL (Paid and Volunteer) | 2,234 | 9.05 | 8.92 | 0.13 |
| CHILD/YOUTH CARE PERSONNEL | 1,795 | 7.27 | 7.53 | -0.26 |
| CHILD DAY CARE PERSONNEL | 6,570 | 26.60 | 25.67 | 0.93 |
| CORRECTIONAL PERSONNEL | 1,997 | 8.09 | 7.61 | 0.48 |
| DENTAL PERSONNEL | 3,954 | 16.01 | 15.06 | 0.95 |
| DIETARY PERSONNEL | 4,393 | 17.79 | 17.16 | 0.63 |
| EYE CARE PERSONNEL | 1,229 | 4.98 | 4.37 | 0.61 |
| HEALTH RECORDS PERSONNEL | 909 | 3.68 | 3.45 | 0.23 |
| HOME CARE PERSONNEL | 2,013 | 8.15 | 7.09 | 1.06 |
| DIAGNOSTIC/THERAPEUTIC PERSONNEL | 6,098 | 24.69 | 23.25 | 1.44 |
| REGISTERED NURSE PERSONNEL | 19,152 | 77.54 | 73.50 | 4.04 |
| OTHER NURSING PERSONNEL (NON-RN) | 11,095 | 44.92 | 42.24 | 2.69 |
| OCCUPATIONAL HEALTH PERSONNEL | 116 | 0.47 | 0.24 | 0.23 |
| PHARMACEUTICAL PERSONNEL | 2,982 | 12.07 | 11.12 | 0.96 |
| PSYCHOLOGICAL PERSONNEL | 1,675 | 6.78 | 6.31 | 0.48 |
| PUBLIC HEALTH PERSONNEL | 257 | 1.04 | 0.99 | 0.05 |
| REHABILITATION PERSONNEL | 6,686 | 27.07 | 26.43 | 0.64 |
| SOCIAL WORK/SERVICE PERSONNEL | 3,348 | 13.56 | 14.46 | -0.91 |
| PROGRAM ADMIN/CLERICAL SUPPORT | 8,899 | 36.03 | 34.80 | 1.23 |
| OTHER HEALTH CARE/SERVICE PERSONNEL | 478 | 1.94 | 1.00 | 0.93 |
| TOTAL | 85,880 | 347.72 | 331.22 | 16.50 |

*Personnel to population ratio = (1990 total permanent personnel/1990 Alberta populaton) X 10,000. Alberta population, June 1, 1990 = 2,469,800 (Source: "Alberta Population Growth, Second Quarter", 1990, Alberta Bureau of Statistics).

**Personnel to population ratio = (1989 total permanent personnel/1989 Alberta populaton) X 10,000. Alberta population, June 1, 1989 = 2,423,000 (Source: "Alberta Population Growth, Second Quarter", 1990, Alberta Bureau of Statistics). Note that the 1989 personnel to population ratios published in prior reports may differ slightly from the 1989 personnel/population ratios calculated in the table due to the revision of the Alberta June 1, 1989 total population estimate.

***Personnel to population ratio change = (1990 personnel to population ratio) - (1989 personnel to population ratio).

TABLE 5. NUMBER OF PERMANENT PERSONNEL IN OCCUPATIONAL GROUPS PER 1,000 POPULATION RATIOS IN LARGE URBAN, SMALL URBAN, LARGE TOWN, AND RURAL AREAS MARCH 31, 1990

| OCCUPATIONAL GROUP | PERSONNEL PER 1,000 POPULATION RATIOS* | | | |
|---|---|---|---|---|
| | LARGE URBAN | SMALL URBAN | LARGE TOWN | RURAL AREAS |
| AMBULANCE PERSONNEL (Paid and Volunteer) | 0.51 | 1.31 | 1.99 | 1.59 |
| CHILD/YOUTH CARE PERSONNEL | 0.81 | 0.85 | 0.46 | 0.49 |
| CHILD DAY CARE PERSONNEL | 3.38 | 2.02 | 2.21 | 1.03 |
| CORRECTIONAL PERSONNEL | 0.79 | 0.83 | 2.94 | 0.33 |
| DENTAL PERSONNEL | 1.90 | 1.83 | 1.92 | 0.55 |
| DIETARY PERSONNEL | 1.67 | 2.16 | 3.10 | 1.58 |
| EYE CARE PERSONNEL | 0.60 | 0.72 | 0.51 | 0.09 |
| HEALTH RECORDS PERSONNEL | 0.34 | 0.44 | 0.60 | 0.37 |
| HOME CARE PERSONNEL | 0.59 | 0.91 | 1.99 | 1.15 |
| DIAGNOSTIC/THERAPEUTIC PERSONNEL | 3.08 | 2.38 | 1.88 | 0.91 |
| REGISTERED NURSING PERSONNEL | 8.49 | 9.68 | 10.60 | 4.03 |
| OTHER NURSING PERSONNEL (NON-RN) | 4.18 | 5.95 | 8.33 | 3.77 |
| OCCUPATIONAL HEALTH PERSONNEL | 0.07 | 0.05 | 0.00 | 0.00 |
| PHARMACEUTICAL PERSONNEL | 1.30 | 1.52 | 1.62 | 0.68 |
| PSYCHOLOGICAL PERSONNEL | 0.83 | 0.65 | 0.67 | 0.26 |
| PUBLIC HEALTH PERSONNEL | 0.06 | 0.08 | 0.24 | 0.22 |
| REHABILITATION PERSONNEL | 2.28 | 7.52 | 4.55 | 1.12 |
| SOCIAL WORK/SERVICE PERSONNEL | 1.38 | 1.70 | 2.23 | 0.92 |
| PROGRAM ADMIN/CLERICAL SUPPORT | 3.55 | 5.11 | 6.91 | 2.24 |
| OTHER HEALTH CARE/SERVICE PERSONNEL | 0.22 | 0.18 | 0.04 | 0.15 |
| TOTAL | 36.01 | 45.92 | 52.79 | 21.48 |

*Personnel per 1,000 population ratio= (total permanent personnel/area population) X 1,000. The personnel per 1,000 population ratio was calculated separately for each of the following four areas: large urban --population > 70,000 (includes Edmonton(CMA) and Calgary(CMA)); Small Urban-- 10,000 < population < 70,000; Large Town --5,000 < population < 10,000; and rural areas population < 10,000. Large urban, small urban, large town, and rural population figures were based on an estimated June 1, 1990 total population of 2,469,800. The population estimates for these selected urban and rural areas are experimental results derived from the Alberta Bureau of Statistics small area population model, which is still in development.

each occupation included in the survey is provided in Appendix 2.

### 6.1 Vacancy Rates by Occupational Category

Table 6 provides a comparative summary of vacancy rates and vacancy rate change from 1989 to 1990 for each occupational group. The specific occupations included in each group are given in Appendix 2.

**Registered nurses** experienced a substantial decline in vacancy rates from 1989 (8.2%) to 1990 (5.0%). The number of vacant positions reported for this occupational group decreased dramatically from 1,265 (1989) to 794 (1990). The decline in vacancy rates was observed across almost all registered nurse specialties, with the most substantial declines occurring for nurses working in the recovery room (-7.4%), maternal/child care (-6.9%), and pediatrics (-6.7%). Above average vacancy rates in 1990 continued for nurses employed in psychiatric wards (9.2%), short stay units (7.7%), long-term care/rehabilitation (7.7%), and intensive care (7.3%).

The vacancy rate for **non-RN nursing personnel** remained relatively low from 1989 (3.5%) to 1990 (2.9%). The highest 1990 vacancy rates in this occupational group were seen for porters (7.8%), registered psychiatric nurses (6.5%) and operating room technicians (6.0%). Comparatively low vacancy rates were observed for registered nursing assistants (3.0%) and 'other' nursing staff (1.9%).

Overall, **dental occupations** had the highest vacancy rate of all health and social service occupational groups presented in Table 6. Dental hygienists, with 132 vacant positions and a vacancy rate of 18.5 percent, continued to account for the high vacancy rate within this occupational group. As well, dental hygienists had one of the largest vacancy rate increases from 1989 to 1990 (+2.3%). Other relatively high vacancy rates were also seen for registered dental technicians (6.3%) and certified dental assistants (5.7%).

The **rehabilitation occupations** also had one of the highest vacancy rates (6.4%) in 1990. Although this occupational group experienced a general decline in vacancy rates from 9.4 percent (1989) to 6.4 percent (1990), notable vacancy rate increases were observed for some specific rehabilitation occupations. In particular, vacancy rates increased from 1989 to 1990 for occupational therapists by 1.2 percent and for speech therapists by 4.1 percent. Exceptionally high vacancy rates in 1990 continued for occupational therapists (14.9%), physical therapists (14.3%), and speech therapists (13.8%).

Other comparatively high 1990 vacancy rates were observed for social service aides (8.1%), medical records administrators/librarians (7.1%), public health inspectors (6.9%), paid emergency medical technicians-ambulance (6.6%), social workers with a master's degree in social work (6.2%), occupational health personnel (6.2%)[1], home care personnel (5.2%), and psychologists (5.0%).

The relatively low vacancy rate of 4.8 percent seen for the **diagnostic and therapeutic occupations** in 1989 declined even further in 1990 to 2.8 percent. The most substantial declines in vacancy rates occurred for electroencephalographic technologists (-34.4%), respiratory therapists (-10.8%), and diagnostic medical sonographers (-6.0%). Despite the general vacancy rate decline, respiratory therapists continued to have an above average vacancy rate in 1990 (5.9%).

The remaining occupational groups presented in Table 6 showed close to average to low vacancy rates. Some of the health and social service occupations which had high vacancy rates in 1990 are highlighted in Figure 3.

### 6.2 Vacancy Rates by Large Urban, Small Urban, Large Town, and Rural Areas for Selected Occupations

Table 7 looks at the geographical distribution of vacancy rates for selected occupations across large urban, small urban, large town, and rural areas. Vacancy rates were higher in rural areas compared to urban centres for most of the occupations presented in the table. Rural vacancy rates were exceptionally high for speech therapists (36.0%), occupational therapists (31.1%), and physical therapists (30.3%). Pharmacists were noteworthy for having the lowest vacancy rate, 2.2 percent, in large urban centres.

Home care personnel was the only occupational group in Table 7 to show a smaller vacancy rate in rural areas (2.8%) compared to large urban centres (7.8%).

Figure 4 provides an illustration of the geographical distribution of vacancy rates for selected occupations.

## 7. Turnover Rates

The total number of full-time equivalent resignations increased from 9,578 (1989) to 10,759 (1990). The corresponding change in the turnover rate from 14.0 percent (1989) to 14.5 percent (1990) was minimal. Appendix 2 provides a comprehensive summary of full-

[1]The 2.9 percent vacancy rate increase for occupational health personnel may, in part, be due to the revised and expanded mailing list for this occupational group.

TABLE 6. VACANCY RATES AND VACANCY RATE CHANGE
BY OCCUPATIONAL GROUP
MARCH 31, 1989 AND 1990

| OCCUPATIONAL GROUPS | 1990 FTE POSITIONS | 1990 VACANT FTE POSITIONS | 1990 VACANCY RATE (%) | 1989 VACANCY RATE (%) | 1989-1990 VACANCY RATE CHANGE* |
|---|---|---|---|---|---|
| AMBULANCE PERSONNEL (PAID AND VOLUNTEER) | 1,727 | 101 | 5.8 | 4.6 | 1.2 |
| CHILD/YOUTH CARE PERSONNEL | 1,673 | 64 | 3.8 | 4.4 | -0.6 |
| CHILD DAY CARE PERSONNEL | 6,188 | 195 | 3.2 | 3.3 | -0.2 |
| CORRECTIONAL PERSONNEL | 1,997 | 45 | 2.3 | 2.0 | 0.2 |
| DENTAL PERSONNEL | 3,749 | 265 | 7.1 | 6.1 | 1.0 |
| DIETARY PERSONNEL | 3,359 | 83 | 2.5 | 5.5 | -3.1 |
| EYE CARE PERSONNEL | 1,153 | 50 | 4.3 | 3.0 | 1.3 |
| HEALTH RECORDS PERSONNEL | 802 | 22 | 2.7 | 3.1 | -0.4 |
| HOME CARE PERSONNEL | 1,294 | 68 | 5.2 | 4.2 | 1.0 |
| DIAGNOSTIC/THERAPEUTIC PERSONNEL | 5,345 | 149 | 2.8 | 4.8 | -2.0 |
| REGISTERED NURSE PERSONNEL | 15,961 | 794 | 5.0 | 8.2 | -3.3 |
| NURSING PERSONNEL (NON-RN) | 8,869 | 260 | 2.9 | 3.5 | -0.6 |
| OCCUPATIONAL HEALTH PERSONNEL | 121 | 8 | 6.2 | 3.4 | 2.9 |
| PHARMACEUTICAL PERSONNEL | 2,555 | 102 | 4.0 | 5.8 | -1.8 |
| PSYCHOLOGICAL PERSONNEL | 1,424 | 57 | 4.0 | 4.3 | -0.3 |
| PUBLIC HEALTH PERSONNEL | 258 | 11 | 4.3 | 3.3 | 1.0 |
| REHABILITATION PERSONNEL | 6,151 | 394 | 6.4 | 9.4 | -3.0 |
| SOCIAL WORK/SERVICE PERSONNEL | 3,294 | 137 | 4.1 | 4.7 | -0.6 |
| PROGRAM ADMIN/CLERICAL SUPPORT | 8,027 | 162 | 2.0 | 2.8 | -0.8 |
| OTHER HEALTH CARE/SERVICE PERSONNEL | 429 | 17 | 4.0 | 2.0 | 1.9 |
| TOTALS | 74,372 | 2,980 | 4.0 | 5.4 | -1.4 |

*VACANCY RATE CHANGE = 1990 vacancy rate - 1989 vacancy rate. The vacancy rate change calculated may not correspond exactly to the difference between the 1989 and 1990 vacancy rates presented in table, due to the rounding of all figures.

Figure 3.

## Vacancy Rates For Selected Health and Social Service Occupations

March 31, 1990

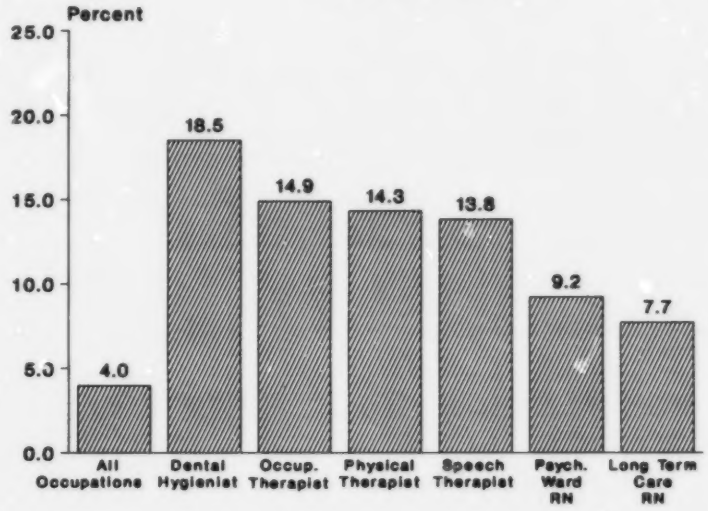


Figure 4.

## Vacancy Rates in Large Urban, Small Urban, Large Town, and Rural Areas for Selected Health and Social Service Occupations

March 31, 1990

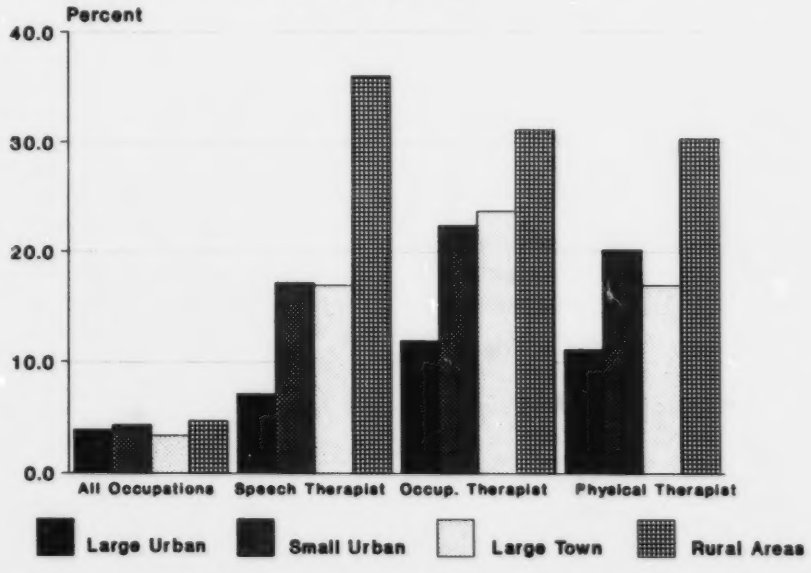

TABLE 7. VACANCY RATES FOR SELECTED HEALTH AND SOCIAL SERVICE OCCUPATIONS BY LARGE URBAN, SMALL URBAN, LARGE TOWN, AND RURAL AREAS MARCH 31, 1990

| OCCUPATION | VACANCY RATE | | | |
|---|---|---|---|---|
| | LARGE URBAN | SMALL URBAN | LARGE TOWN | RURAL AREAS |
| ALL OCCUPATIONS | 3.9 | 4.3 | 3.4 | 4.7 |
| Dental Hygienists | 17.0 | 24.0 | 19.8 | 23.3 |
| Home Care Personnel* | 7.8 | 3.3 | 1.5 | 2.8 |
| Occupational Therapists | 11.9 | 22.4 | 23.7 | 31.1 |
| Pharmacists | 2.2 | 10.8 | 7.1 | 6.2 |
| Physical Therapists | 11.1 | 20.1 | 16.9 | 30.3 |
| Psychologists | 3.7 | 5.9 | 17.0 | 13.9 |
| Public Health Inspectors** | 4.2 | 5.3 | 14.0 | 11.1 |
| Registered Nurse Personnel | 4.2 | 6.8 | 4.1 | 7.8 |
| Social Work Personnel | 3.9 | 1.8 | 6.5 | 6.3 |
| Speech Therapists | 7.1 | 17.1 | 16.9 | 36.0 |

* Home Care Personnel includes homemakers, homehelpers, and personal care attendants.
** The vacancy rates for public health inspectors were based on small numbers of vacant full-time equivalent positions (VFTE's): large urban VFTE's = 3; small urban VFTE's = 1; large town VFTE's = 3; and rural areas VFTE's = 2.

time equivalent resignations and turnover rates for each occupation surveyed.[1]

### 7.1 Turnover Rates by Occupational Category

Table 8 highlights full-time equivalent resignations and turnover rate changes from 1989 to 1990 for each occupational group in the survey. The specific occupations included in each category are given in Appendix 2.

**Registered nurses** showed no substantial change in turnover rates from 1989 (12.4%) to 1990 (12.7%). Nursing specialties with relatively high 1990 turnover rates included medical/surgical (17.3%), emergency room (17.2%), psychiatric ward (16.8%), pediatrics (16.0%), and offices/clinics (16.0%). Comparatively low turnover rates were seen among nurses working in the recovery room (3.8%), short stay units (4.6%), intravenous therapy (6.2%), out-patient services (6.5%), home care (6.6%), nursing education (7.0%), and administration (7.9%).

**Non-RN nursing personnel** also experienced little change in turnover rates from 1989 (12.7%) to 1990 (13.4%). Registered psychiatric nurses were the only occupation to show a substantial decline in turnover rates from 1989 (15.1%) to 1990 (9.8%). 'Other' nursing staff continued in 1990 to have one of the highest turnover rates (15.5%).

Table 8 indicates that there was a dramatic rise in the turnover rate among **day care personnel**. For all day care personnel, the number of full-time equivalent resignations increased from 1,689 (1989) to 2,335 (1990). The corresponding turnover rate for day care personnel increased substantially from 28.5 percent (1989) to 37.7 percent (1990). Over one-half of the full-time equivalent resignations by day care personnel were by day care staff with no diploma or degree. Day care personnel with no diploma or degree also had the highest 1990 turnover rate (49.1%). Day care directors with either a diploma or a certificate in early childhood education were one of the few categories of day care personnel with lower than average turnover rates.

Next to day care personnel, **child/youth care personnel** continued to have one of the highest 1990 turnover rates (24.9%). From 1989 to 1990, the overall turnover rate for this occupational category declined by 2.3 percent. A good proportion of this turnover rate decrease was due to the drop in the number of resignations by child/youth care workers with no diploma or degree. In 1990, every level of child/youth care worker had a turnover rate substantially higher than the survey average of 14.5 percent.

**Home care personnel** was one of the few occupational groups to show a substantial increase in turnover rates from 1989 (16.1%) to 1990 (19.2%). The majority of the turnover rate increase(s) was due to the rise in the number of resignations by homemakers. High 1990 turnover rates occurred for homemakers (23.5%) and personal care attendants (17.2%). Home helpers had comparatively lower turnover rates (10.5%).

As a group, **rehabilitation personnel** had one of the highest turnover rates in 1990 (16.6%). Particularly high 1990 turnover rates were observed for prosthetists/orthotists (25.0%), rehabilitation practitioners (22.5%), occupational therapists (19.6%), and physical therapists (17.5%). Also of note, was the large drop in the turnover rates for recreational therapists from 20.8 percent (1989) to 11.3 percent (1990).

The 15.8 percent turnover rate for **dental personnel** exceeded the average turnover rate observed for all health and social service occupations combined. Dental assistants, with a turnover rate of 18.0 percent, accounted for the majority of the resignations among the dental occupations. Relatively low turnover rates were seen for dental hygienists (13.9%), certified denturists (6.0%), and registered dental technicians (5.7%).

The remaining occupations in Table 8 all had lower than average turnover rates in 1990. Some occupations were notable for their particularly low 1990 turnover rates. Occupations with exceptionally low turnover rates included correctional service personnel (4.5%), psychologists (4.9%), public health inspectors (5.4%), and occupational health personnel (6.6%).

Figure 5 provides an illustration of some health and social service occupations which had high turnover rates in 1990.

### 7.2 Turnover Rates by Large Urban, Small Urban, Large Town, and Rural Areas for Selected Occupations

An analysis of turnover rates across large urban, small urban, large town, and rural areas is provided for selected occupations in Table 9. With the exception of registered nurses, all of the occupations in the table show lower turnover rates in rural areas compared to large urban centres. Registered nurses were the only occupation in the table where the turnover rate in rural areas (15.1%) was higher than in large urban centres (12.5%). Also of note, was the exceptionally high turnover rates for day care personnel in large urban

[1]Like vacancy rates, turnover rates were also based on full-time equivalent positions that were calculated using a part-time conversion factor of 2. 'Definition of Terms' in Appendix 2 provides a detailed definition of full-time equivalent positions and turnover rates.

TABLE 8. TURNOVER RATES AND TURNOVER RATE CHANGE
BY OCCUPATIONAL GROUP
MARCH 31, 1989 AND 1990

| OCCUPATIONAL GROUPS | 1990 FTE POSITIONS | 1990 RESIGNATI-ONS | 1990 TURNOVER RATE (%) | 1989 TURNOVER RATE (%) | 1989-1990 TURNOVER RATE CHANGE* |
|---|---|---|---|---|---|
| AMBULANCE PERSONNEL (PAID AND VOLUNTEER) | 1,727 | 163 | 9.4 | 9.8 | -0.3 |
| CHILD/YOUTH CARE PERSONNEL | 1,673 | 417 | 24.9 | 27.2 | -2.3 |
| CHILD DAY CARE PERSONNEL | 6,188 | 2,335 | 37.7 | 28.5 | 9.2 |
| CORRECTIONAL PERSONNEL | 1,997 | 89 | 4.5 | 4.7 | -0.2 |
| DENTAL PERSONNEL | 3,749 | 592 | 15.8 | 14.6 | 1.2 |
| DIETARY PERSONNEL | 3,359 | 413 | 12.3 | 14.3 | -2.0 |
| EYE CARE PERSONNEL | 1,153 | 164 | 14.2 | 14.2 | 0.0 |
| HEALTH RECORDS PERSONNEL | 802 | 77 | 9.5 | 10.1 | -0.6 |
| HOME CARE PERSONNEL | 1,294 | 249 | 19.2 | 16.1 | 3.2 |
| DIAGNOSTIC/THERAPEUTIC PERSONNEL | 5,345 | 585 | 10.9 | 11.9 | -0.9 |
| REGISTERED NURSE PERSONNEL | 15,961 | 2,025 | 12.7 | 12.4 | 0.3 |
| NURSING PERSONNEL (NON-RN) | 8,869 | 1,187 | 13.4 | 12.7 | 0.7 |
| OCCUPATIONAL HEALTH PERSONNEL | 121 | 8 | 6.6 | 8.4 | -1.8 |
| PHARMACEUTICAL PERSONNEL | 2,555 | 242 | 9.5 | 13.5 | -4.0 |
| PSYCHOLOGICAL PERSONNEL | 1,424 | 82 | 5.7 | 5.1 | 0.6 |
| PUBLIC HEALTH PERSONNEL | 258 | 19 | 7.2 | 5.6 | 1.6 |
| REHABILITATION PERSONNEL | 6,151 | 1,024 | 16.6 | 15.6 | 1.0 |
| SOCIAL WORK/SERVICE PERSONNEL | 3,294 | 299 | 9.1 | 10.2 | -1.1 |
| PROGRAM ADMIN/CLERICAL SUPPORT | 8,027 | 754 | 9.4 | 10.5 | -1.1 |
| OTHER HEALTH CARE/SERVICE PERSONNEL | 429 | 40 | 9.3 | 11.8 | -2.5 |
| TOTALS | 74,372 | 10,759 | 14.5 | 14.0 | 0.5 |

*TURNOVER RATE CHANGE = 1990 turnover rate - 1989 turnover rate. The turnover rate change calculated may not correspond exactly to the difference between the 1989 and 1990 turnover rates presented in the table, due to the rounding of all figures.

Figure 5.

## Turnover Rates for Selected Health and Social Service Occupations

March 31, 1990

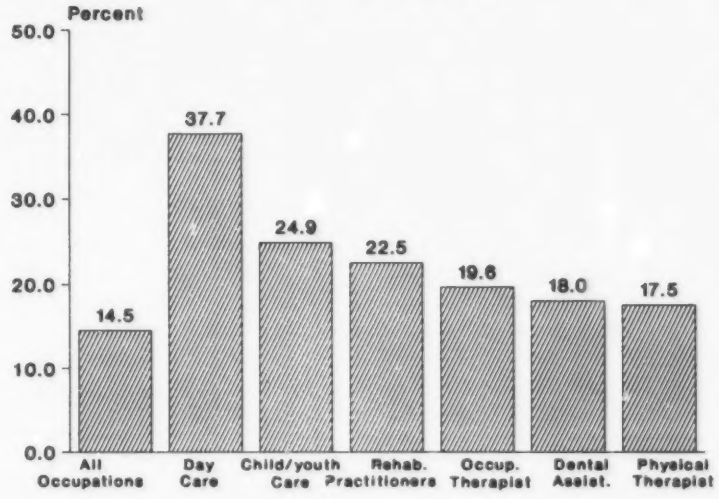


Figure 6.

## Turnover Rates in Large Urban, Small Urban, Large Town, and Rural Areas for Selected Health and Social Service Occupations

March 31, 1990

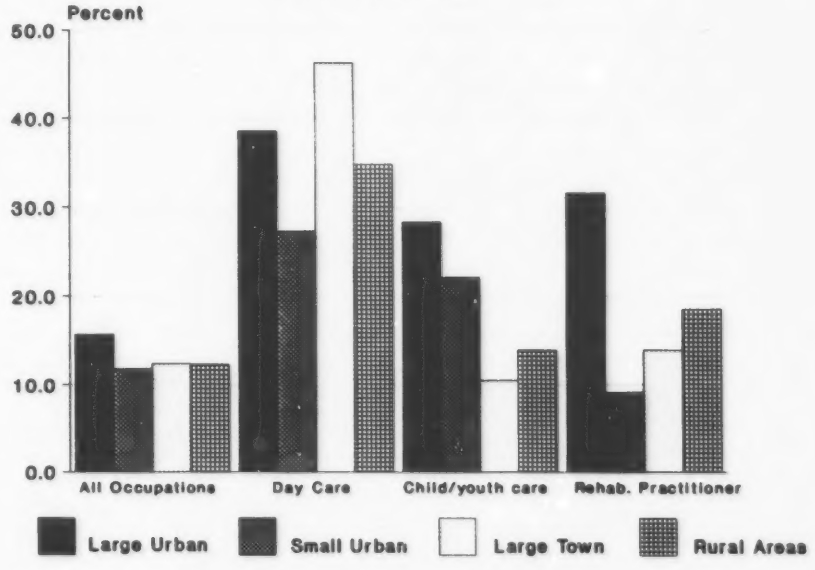

TABLE 9. TURNOVER RATES FOR SELECTED HEALTH AND SOCIAL SERVICE OCCUPATIONS BY LARGE URBAN, SMALL URBAN, LARGE TOWN, AND RURAL AREAS MARCH 31, 1990

| OCCUPATION | TURNOVER RATE | | | |
|---|---|---|---|---|
| | LARGE URBAN | SMALL URBAN | LARGE TOWN | RURAL AREAS |
| ALL OCCUPATIONS | 15.7 | 11.8 | 12.4 | 12.3 |
| Child/Youth Care Personnel | 28.4 | 22.1 | 10.5 | 13.9 |
| Combined Laboratory/X-Ray Technicians | 18.8 | 11.4 | 12.5 | 12.2 |
| Day Care Personnel | 38.6 | 27.3 | 46.3 | 34.8 |
| Dental Assistants | 19.7 | 13.6 | 12.8 | 15.5 |
| Home Care Personnel* | 18.2 | 33.6 | 24.7 | 13.9 |
| Occupational Therapists | 20.6 | 11.2 | 28.8 | 13.3 |
| Physical Therapists | 19.2 | 15.4 | 12.1 | 10.7 |
| Registered Nurse Personnel | 12.5 | 12.0 | 12.3 | 15.1 |
| Rehabilitation Practitioners | 31.6 | 9.1 | 13.9 | 18.5 |

* Home Care Personnel includes homemakers, homehelpers, and personal care attendants.

(38.6%), small urban (27.3%), large towns (46.3%), and rural areas (34.8%). Figure 6 highlights the geographical distribution of turnover rates for some of the occupations in Table 9.

## 8. Casual/Contract/Temporary/Relief Personnel

In the 1990 survey, employers were asked to report the number of casual/contract/temporary/relief personnel employed during the month of March, 1990. This differs from prior surveys, when employers were requested to indicate the total number of casual/contract personnel employed over a 12 month period. Data on casual/contract personnel between 1990 and prior years will not be comparable because of the reduction in the time frame measurement from one year to one month in 1990.[1] It should also be noted that as in past survey years, information regarding casual/contract personnel was not requested from day care centres, ambulance operators, and post-secondary institutions.

A total of 4,530 employers were asked to supply information on casual/contract personnel. Of these employers, 909 (20.1%) indicated that they did hire casual/contract personnel during the month of March while a substantial proportion, 2,565 (56.6%), reported employing no casual/contract personnel. A total of 1,056 (23.3%) employers failed to respond to the question. As a result of this non-response, the survey data will likely tend to under-estimate the total number of health and social service casual/contract personnel in the labour force.

The employers reporting casual/contract personnel were asked to indicate the number of workers and the total number of hours accumulated within each occupational category. To encourage employer response, a number of occupational categories were listed on the form. A category for 'other' occupation(s) was also given, but it should be recognized that the structure of the question favoured responses to the occupations explicitly listed.[2]

Appendix 3 provides a detailed occupational summary of casual/contract health and social service personnel employed in March, 1990. Some highlights from this Appendix are given in Table 10. A total of 10,251 casual/contract personnel were employed during March, with each employee working an average of 52.1 hours. Registered nurses, registered nursing assistants, and 'other' nursing staff had the largest pool of casual/contract personnel. Occupations with the highest monthly mean or average number of hours worked by casual/contract staff included 'other' social workers, food service workers, 'other' nursing staff, and rehabilitation aides.

Table 11 converts the total number of casual/contract hours reported to full-time equivalent workers. Overall, the table indicates that 3,885 full-time workers would be needed to account for the total 466,182 casual/contract hours reported. Registered nurses would require the largest number of full-time workers, 1,379, to work the total casual/contract hours accumulated.

Table 12 provides an analysis of the proportion of casual/contract personnel to permanent personnel for selected occupations. All occupations which had more than 50 permanent personnel and which had a proportion of casual/contract to permanent personnel of 10 percent or greater were included in the table. For all occupations combined, the proportion of casual to permanent personnel was 11.9 percent. The highest ratios of casual to permanent personnel were seen for registered nurses (36.8%), 'other' child/youth care workers (32.6%), and 'other' social workers (28.3%).

## 9. Recruitment Difficulties

### 9.1 Three Month Vacant Positions

In the last section of the survey, employers were requested to indicate the number of vacant positions on March 31, 1990, that had been vacant for three months or longer, while recruitment activities had been in progress. This information was not requested from day care centres. Of the 1,078 employers that reported a vacancy on March 31, 503 (46.7%) indicated that the vacancy had been for three months or longer in duration. This was slightly higher than the percentage of three month vacancies reported in 1989 (45.0%).

Table 13 identifies occupations which had large numbers of positions vacant for three months or longer. The largest number of full-time equivalent three month vacant positions were reported for registered nurses, dental hygienists, and physical therapists. The last column in Table 13 indicates the percentage of total vacancies on March 31 that were vacant for three months or longer. Among the occupations listed, the highest proportion of three month vacancies occurred for speech therapists (80.0%), registered psychiatric nurses (77.6%), dental hygienists (77.6%), and physical therapists (68.0%).

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[1]The time frame for the measurement of casual/contract personnel was reduced to one month for a number of reasons: to increase the ease of response; to increase the accuracy of supplied casual/contract data; and finally, to allow for an analysis of the proportion of permanent to casual/contract personnel.

[2]The occupations explicitly listed on the survey form included registered nurses, registered nursing assistants, physical therapists, occupational therapists, psychologists, social workers, dietitians/nutritionists, pharmacists, audiologist/speech pathologists, and dental hygienists.

TABLE 10. OCCUPATIONS WITH THE HIGHEST NUMBER OF CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990

| OCCUPATIONAL GROUP | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER |
|---|---|---|---|---|
| ALL OCCUPATIONS COMBINED | 10,251 | 8,947 | 466,182 | 52.1 |
| Registered Nurses | 4,699 | 3,990 | 165,472 | 41.5 |
| Registered Nursing Asst./Orderlies | 1,321 | 1,122 | 55,728 | 49.7 |
| Other Nursing Staff* | 1,086 | 962 | 66,345 | 69.0 |
| Rehabilitation Aides | 297 | 297 | 19,313 | 65.0 |
| Food Service Workers | 265 | 218 | 15,139 | 69.4 |
| Other Child/Youth Care Worker** | 227 | 224 | 9,918 | 44.3 |
| Pharmacists | 216 | 206 | 11,982 | 58.2 |
| Homemakers | 202 | 185 | 7,801 | 42.2 |
| Other Social Workers** | 184 | 170 | 15,103 | 88.8 |
| Physical Therapists | 167 | 146 | 6,342 | 43.4 |

*'Other' nursing staff includes nursing aids, nursing attendants, and any nursing staff who are not registered nurses, graduate nurses, psychiatric nurses, nursing assistants, porters, or unit ward clerks.
**'Other' child/youth care workers and 'other' social service workers refer to workers with no degree or diploma.

TABLE 11. CONVERSION OF CASUAL/CONTRACT/TEMPORARY/RELIEF HOURS TO FULL-TIME WORKER EQUIVALENTS FOR SELECTED OCCUPATIONS MARCH 31, 1990

| OCCUPATIONAL GROUP | TOTAL CASUAL HOURS REPORTED | CASUAL HOURS CONVERTED TO F-T WORKERS* |
|---|---|---|
| ALL OCCUPATIONS COMBINED | 466,182 | 3,885 |
| Registered Nurses | 165,472 | 1,379 |
| Registered Nursing Asst./Orderlies | 55,728 | 464 |
| Other Nursing Staff** | 66,345 | 553 |
| Rehabilitation Aides | 19,313 | 161 |
| Other Social Workers*** | 15,103 | 126 |

*The total number casual hours was converted to the equivalent number of workers working full-time for one month. In the computation, the total number of hours worked by casual personnel was divided by the monthly hours worked by one full-time worker (120 hours -based on a 30 hour week).
**'Other' nursing staff includes nursing aids, nursing attendants, and any nursing staff who are not registered nurses, graduate nurses, psychiatric nurses, nursing assistants, porters, or unit ward clerks.
***'Other' social service workers refer to workers with no degree or diploma.

TABLE 12. PERMANENT PERSONNEL, CASUAL PERSONNEL, AND PERCENT CASUAL PERSONNEL
MARCH 31, 1990

| OCCUPATIONAL GROUP | PERMANENT PERSONNEL* | CASUAL PERSONNEL | TOTAL NUMBER PERMANENT/CASUAL PERSONNEL | % CASUAL PERSONNEL |
|---|---|---|---|---|
| ALL OCCUPATIONS COMBINED | 75,894 | 10,251 | 86,145 | 11.9 |
| Dental Hygienists | 780 | 99 | 879 | 11.3 |
| Dietitians | 299 | 48 | 347 | 13.8 |
| Homemakers | 1,158 | 202 | 1,360 | 14.9 |
| Houseparents | 127 | 21 | 148 | 14.2 |
| Occupational Therapists | 465 | 62 | 527 | 11.8 |
| Other Child/Youth Care Workers** | 470 | 227 | 697 | 32.6 |
| Other Nursing Staff | 5,109 | 1,086 | 6,195 | 17.5 |
| Other Social Workers** | 467 | 184 | 651 | 28.3 |
| Physical Therapists | 1,054 | 167 | 1,221 | 13.7 |
| Registered Nurses | 19,152 | 4,699 | 12,763 | 36.8 |
| Registered Nursing Asst./Orderlies | 4,668 | 1,321 | 5,989 | 22.1 |
| Rehabilitation Aides | 1,924 | 297 | 2,221 | 13.4 |
| Speech Therapists | 318 | 38 | 356 | 10.7 |

* Permanent personnel reported by day care centres, ambulance operators, and post-secondary institutions have been excluded.

**'Other' child/youth care workers and 'other' social service workers refer to workers with no degree or diploma.

TABLE 13. NUMBER AND PERCENT OF FULL-TIME EQUIVALENT POSITIONS VACANT THREE MONTHS OR LONGER FOR SELECTED OCCUPATIONS MARCH 31, 1990

| OCCUPATIONAL GROUP | THREE MONTH VACANT FTE POSITIONS* | TOTAL VACANT FTE POSITIONS REPORTED** | PERCENT THREE MONTH VACANT FTE POSITIONS*** |
|---|---|---|---|
| ALL OCCUPATIONS COMBINED | 922 | 2,785 | 33.1 |
| Registered Nurses | 247 | 794 | 31.1 |
| Dental Hygienists | 102 | 132 | 77.6 |
| Physical Therapists | 99 | 146 | 68.0 |
| Pharmacists | 46 | 83 | 55.4 |
| Dental Assistants-Certified with intra-oral training | 44 | 84 | 52.7 |
| Speech Therapists | 36 | 45 | 80.0 |
| Registered Psychiatric Nurses | 33 | 43 | 77.6 |
| Occupational Therapists | 32 | 69 | 46.4 |
| Psychologists | 28 | 49 | 56.7 |
| Master's of Social Work | 13 | 30 | 42.4 |

*'Definition of Terms' in Appendix 2 gives the formula definition for vacant FTE positions.
**The 195 vacant full-time equivalent positions reported by day care centres were excluded from the vacant FTE position total given in the table.
***Percent Three Month Vacant FTE Positions= (number of full-time equivalent three month vacancies/total number of full-time equivalent vacancies reported) X 100. Percentages shown were calculated using all significant digits rather than on the rounded figures presented in the table.

TABLE 14. PERCENT FULL-TIME EQUIVALENT POSITIONS REPORTED VACANT THREE MONTHS OR LONGER BY LARGE URBAN, SMALL URBAN, LARGE TOWN, AND RURAL AREAS FOR SELECTED OCCUPATIONS MARCH 31, 1990*

| OCCUPATIONAL GROUP | PERCENT THREE MONTH VACANT FTE POSITIONS | | | |
|---|---|---|---|---|
| | LARGE URBAN | SMALL URBAN | LARGE TOWN | RURAL AREAS |
| ALL OCCUPATIONS COMBINED | 23.4 | 46.5 | 46.5 | 52.0 |
| Dental Assistants-Certified with intra-oral Training | 38.6 | 89.3 | 68.4 | 57.9 |
| Dental Hygienists | 73.5 | 88.4 | 88.9 | 81.0 |
| Occupational Therapists | 21.4 | 84.6 | 92.9 | 78.6 |
| Physical Therapists | 66.7 | 72.5 | 61.9 | 70.4 |
| Speech Therapists | 74.1 | 80.0 | 72.7 | 87.5 |
| Pharmacists | 38.2 | 57.6 | 95.2 | 54.8 |
| Psychologists | 31.0 | 80.0 | 100.0 | 100.0 |
| Registered Nurses | 16.1 | 44.3 | 40.4 | 64.5 |

* For table clarification, see above footnotes.

The distribution of three month vacancies across large urban, small urban, large town, and rural areas is examined in Table 14. For all the occupations listed in the table, the percentage of three month vacancies was higher in rural areas compared to urban centres. This was particularly the case for psychologists for whom the percentage of three month vacancies was 100 percent in rural areas compared to 31.0 percent in large urban centres. Exceptionally high percentages of three month vacancies across all areas were seen for dental hygienists, physical therapists, and speech therapists.

### 9.2 Anticipated Recruitment Difficulties

Employers were asked to indicate whether they anticipated any difficulties recruiting health and social service personnel during the next year. Again, this information was not requested from day care centres. Of the 4,683 employers who were asked this question, 1,118 (23.9%) expected recruitment difficulties, while the majority, 2,570 (54.9%) employers, anticipated no recruitment problems. A total of 995 (21.2%) employers did not respond to the question.

Overall, the percentage of employers expecting recruitment difficulties in 1990 (23.9%) increased marginally from 1989 (22.6%). Employers reported that they anticipated recruitment difficulties for some occupational groups more than others. In particular, a substantial percentage of the employers of general duty registered nurses (65.8%), dental hygienists (58.9%), physical therapists (48.1%), emergency medical technicians (paramedic-38.5% and ambulance-36.0%), occupational therapists (32.4%), rehabilitation practitioners (30.7%), speech therapists (27.5%), and respiratory therapists (26.2%) expected recruitment difficulties in 1991.

For all occupations combined, the primary reasons cited by employers for recruitment difficulties included a shortage of available personnel (47.9%) and undesirable location (21.4%). A substantial number of employers indicated that a shortage of available personnel was the reason for difficulties in the recruitment of dental hygienists (63.5%), occupational therapists (60.7%), physical therapists (55.5%), respiratory therapists (53.3%), speech therapists (42.6%), registered nurses (39.6%) and emergency medical technicians-paramedic (31.8%). A notable proportion of employers reported that undesirable location was an important factor in the recruitment of respiratory therapists (33.3%), pharmacists (32.9%), speech therapists (31.9%), registered nurses (29.6%), occupational therapists (25.0%), and physical therapists (21.0%). An inadequate salary was cited as the major reason for the recruitment difficulty of rehabilitation practitioners (41.4%).

## 10. Employer Groups

A descriptive overview of the employer groups surveyed by institutional and community setting is provided in Table 15. It is anticipated that a more detailed analysis of specific employer groups will be available from the 1990 survey data at a later date.

Table 15 reveals that slightly over one half, 53.0 percent, of all permanent personnel were employed in community settings. The remaining 47.0 percent were employed in institutional settings. A comparison between 1989 and 1990, indicates that the number of permanent personnel increased by 8.4 percent in the institutional sector and by 5.8 percent in the community sector.

The increase in permanent personnel in 1990 did not have a noticeable impact on the proportion of part-time to full-time personnel. As in 1989, the percentage of part-time personnel in 1990 continued to be higher in the institutional sector (38.5%) compared to the community sector (29.5%).

Table 15 reveals that there was a substantial variation in the percentage of casual/contract/temporary/relief personnel employed across different work settings. Overall, the table indicates that the percentage of casual/contract personnel working in institutional settings (15.9%) was more than double the percentage of casual/contract personnel found in community settings (6.9%). In the institutional sector, the highest percentages of casual/contract personnel were seen in psychiatric (22.9%), auxiliary (21.1%), and acute care (19.7%) hospitals. Within the community sector, relatively high percentages of casual/contract personnel were seen in industrial/occupational health firms (15.4%) and group homes (14.8%).

Employers in the institutional sector experienced a general vacancy rate decline from 6.8 percent (1989) to 4.1 percent (1990). Acute care hospitals had the greatest vacancy rate decline from 1989 (8.3%) to 1990 (5.3%). Psychiatric hospitals, where the rate rose from 4.8 percent (1989) to 8.2 percent (1990), had the highest vacancy rate in the institutional sector in 1990.

There was a small overall vacancy rate decrease from 1989 (4.3%) to 1990 (3.9%) for employers within the community sector. The largest vacancy rate decline within this group of employers was observed for government departments where the vacancy rate decreased from 7.6 percent (1989) to 4.2 percent (1990). Comparatively high 1990 vacancy rates were seen for the following employer groups: physiotherapists in private practice (8.7%), ambulance operators (5.7%), and dental laboratory/clinics/offices (5.7%).

TABLE 15. NUMBER OF PERMANENT AND CASUAL PERSONNEL, VACANCY RATES, AND TURNOVER RATES, BY EMPLOYER GROUP, MARCH 31, 1990

| EMPLOYER GROUPS | | FULL-TIME PERMANENT | PART-TIME PERMANENT | TOTAL PERMANENT | TOTAL CASUAL | PERCENT CASUAL* | VACANCY RATE (%) | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|
| INSTITUTIONS | Total | 24,813 | 15,535 | 40,348 | 7,626 | 15.9 | 4.1 | 12.4 |
| | ACUTE CARE HOSPITALS | 11,258 | 7,510 | 18,768 | 4,616 | 19.7 | 5.3 | 13.9 |
| | AUXILIARY HOSPITALS | 1,736 | 2,020 | 3,756 | 1,006 | 21.1 | 3.6 | 12.3 |
| | NURSING HOMES | 1,810 | 2,218 | 4,028 | 348 | 8.0 | 2.5 | 20.7 |
| | PSYCHIATRIC HOSPITALS | 1,126 | 151 | 1,277 | 379 | 22.9 | 8.2 | 11.4 |
| | MULTI-LEVEL HOSPITALS** | 6,469 | 3,496 | 9,965 | 1,154 | 10.4 | 2.5 | 9.2 |
| | CORRECTIONAL INSTITUTIONS | 2,414 | 140 | 2,554 | 123 | 4.6 | 2.2 | 5.3 |
| COMMUNITY | Total | 32,090 | 13,442 | 45,532 | 2,625 | 6.9 | 3.9 | 16.2 |
| | DAY CARE CENTRES | 5,401 | 1,132 | 6,533 | +N/A | +N/A | 3.2 | 37.9 |
| | GOVERNMENT DEPARTMENTS++ | 4,904 | 322 | 5,226 | 485 | 8.5 | 4.2 | 6.7 |
| | HLTH/SOCIAL SERVICE AGENCIES | 3,658 | 1,792 | 5,450 | 249 | 4.4 | 4.2 | 19.4 |
| | DENTAL LABS/CLINICS/OFFICES | 3,891 | 1,266 | 5,157 | 219 | 4.1 | 5.7 | 15.9 |
| | MEDICAL LABS/CLINICS | 2,840 | 1,939 | 4,779 | 287 | 5.7 | 1.9 | 13.0 |
| | COMMUNITY PHARMACIES | 1,664 | 1,099 | 2,763 | 181 | 6.1 | 3.7 | 8.3 |
| | HEALTH UNITS | 1,895 | 1,256 | 3,151 | 317 | 9.1 | 3.1 | 6.9 |
| | AMBULANCE OPERATORS | 1,009 | 1,339 | 2,348 | +N/A | +N/A | 5.7 | 9.0 |
| | GROUP HOMES | 1,431 | 315 | 1,746 | 304 | 14.8 | 3.8 | 22.4 |
| | AADAC/FCSS*** | 1,040 | 900 | 1,940 | 200 | 9.3 | 2.3 | 12.8 |
| | POST-SECONDARY INSTITUTIONS | 819 | 286 | 1,105 | +N/A | +N/A | 3.9 | 2.9 |
| | EYE CARE OFFICES | 1,293 | 400 | 1,693 | 24 | 1.4 | 3.3 | 13.8 |
| | SCHOOL BOARDS | 682 | 428 | 1,110 | 87 | 7.3 | 2.4 | 1.6 |
| | INDUSTRIAL/OCC. HEALTH FIRMS | 373 | 248 | 621 | 113 | 15.4 | 5.3 | 8.2 |
| | PRIVATE PHYSIOTHERAPISTS | 475 | 272 | 747 | 43 | 5.4 | 8.7 | 25.8 |
| | PRIVATE PSYCHOLOGISTS | 321 | 411 | 732 | 71 | 8.8 | 3.7 | 4.7 |
| | HW CANADA/INDIAN AFFAIRS | 394 | 37 | 431 | 45 | 9.5 | 4.7 | 14.1 |
| TOTAL INSTITUTION/COMMUNITY | | 56,903 | 28,977 | 85,880 | 10,251 | 11.9 | 4.0 | 14.5 |

*Percent casual= [casual personnel/(permanent personnel + casual personnel)] X 100.
Permanent personnel reported by day care centres, ambulance operators, and post-secondary institutions have been excluded from the calculation of percent casual personnel.
**Multi-level hospitals include facilities which have a combination of at least two of the following bed types: acute care beds, auxiliary beds, and/or nursing home beds.
++Government departments include the Department of Health and the Department of Social Services.
***Alberta Alcohol and Drug Abuse Commission/Family and Community Support Services.
+N/A -The section on casual personnel was not included in the survey form given to day care centres, ambulance operators, and post-secondary institutions.

Table 15 indicates that there was a higher turnover rate in community work settings (16.2%) compared to institutional settings (12.4%). Daycare centres had an exceptionally high turnover rate of 37.9 percent in 1990. Moreover, this employer group also experienced the most pronounced vacancy rate increase from 1989 (28.5%) to 1990 (37.9%). Comparatively high 1990 turnover rates continued for physiotherapists in private practice (25.8%), group homes (22.4%), and health/social service agencies (19.4%).

## 11. Further Information

The summary of health and social service personnel provided in this report has served to highlight the types of data analyses that are possible with the information supplied by the employer survey. The data available from the 1990 survey, as well as data from prior survey years, allows for additional analyses tailored to particular occupations, employer groups, or geographical areas.

Individuals or organizations are encouraged to request supplemental information and analyses specific to their needs. It should be noted that the Alberta Health and Social Services Disciplines Committee is able to release information on aggregate data only; data on individual employers is confidential and may only be released to the reporting employer. For further information, please contact:

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APPENDIX 1. ESTIMATED NUMBER OF UNREPORTED PERMANENT PERSONNEL RESULTING FROM SURVEY NON-RESPONSES*
MARCH 31, 1990

| EMPLOYER GROUP | NUMBER EMPLOYERS NOT RESPONDING | ESTIMATED NUMBER OF UNREPORTED PERSONNEL | NUMBER OF REPORTED PERSONNEL | % OF UNREPORTED TO REPORTED PERSONNEL |
|---|---|---|---|---|
| AADAC/FCSS** | 10 | 121 | 1,940 | 5.9 |
| AMBULANCE OPERATORS | 3 | 56 | 2,348 | 2.3 |
| COMMUNITY AGENCIES | 10 | 243 | 5,450 | 4.3 |
| CORRECTIONAL CENTRES | 0 | 0 | 2,554 | 0.0 |
| DAYCARE CENTRES | 21 | 182 | 6,533 | 2.7 |
| DENTAL LABORATORIES | 2 | 14 | 605 | 2.3 |
| DENTISTS' OFFICES | 18 | 95 | 4,207 | 2.2 |
| DENTURE CLINICS | 1 | 2 | 345 | 0.6 |
| DEPARTMENT OF HEALTH | 0 | 0 | 1,117 | 0.0 |
| DEPT. OF SOCIAL SERVICES | 1 | 28 | 4,109 | 0.7 |
| GROUP HOMES | 0 | 0 | 1,746 | 0.0 |
| HEALTH UNIT OFFICES | 5 | 95 | 3,151 | 2.9 |
| HOSPITALS, ACUTE CARE | 0 | 0 | 18,768 | 0.0 |
| HOSPITALS, AUXILIARY | 0 | 0 | 3,756 | 0.0 |
| HOSPITALS, MULTI-LEVEL FACILITIES*** | 0 | 0 | 9,965 | 0.0 |
| HOSPITALS, PSYCHIATRIC | 0 | 0 | 1,277 | 0.0 |
| HW CANADA/INDIAN AFFAIRS | 0 | 0 | 431 | 0.0 |
| MEDICAL CLINICS | 2 | 15 | 2,305 | 0.6 |
| MEDICAL LABORATORIES | 3 | 34 | 2,474 | 1.4 |
| NURSING HOMES | 0 | 0 | 4,028 | 0.0 |
| OPHTHALMIC DISPENSERS | 1 | 4 | 862 | 0.5 |
| OPHTHALMOLOGISTS | 0 | 0 | 272 | 0.0 |
| OPTOMETRISTS | 2 | 8 | 559 | 1.4 |
| PHARMACIES | 6 | 40 | 2,763 | 1.4 |
| PHYSICAL THERAPISTS | 0 | 0 | 747 | 0.0 |
| POST-SECONDARY INSTITUTIONS | 0 | 0 | 1,105 | 0.0 |
| PRIVATE INDUSTRY | 1 | 3 | 621 | 0.5 |
| PSYCHOLOGISTS | 15 | 27 | 732 | 3.6 |
| SCHOOL BOARDS | 0 | 0 | 1,110 | 0.0 |
| TOTAL | 101 | 967 | 85,880 | 1.1 |

*The estimated number of unreported permanent personnel for 1990 is based on the number of personnel reported by the employer in the 1989 employer survey. If no data is available for 1989, then the number of unreported personnel is estimated from the average number of personnel reported by the same employer group in 1990.

**Alberta Alcohol and Drug Abuse Commission/Family and Community Support Services.

***Multi-level Hospitals include facilities which have a combination of at least two of the following bed types: acute care beds, auxiliary beds, and/or nursing home beds.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| ALL HEALTH/SOCIAL SERVICE OCCUPATIONS | | 56,903 | 28,977 | 85,880 | 74,372 | 2,980 | 4.0 | 10,759 | 14.5 |
| Ambulance Personnel (Paid) | Total | 1,019 | 628 | 1,647 | 1,411 | 78 | 5.5 | 144 | 10.2 |
| | Standard St. John Ambul. Cert. | 120 | 134 | 254 | 193 | 6 | 3.1 | 22 | 11.1 |
| | Advanced St. John Ambul. Cert. | 13 | 10 | 23 | 18 | 0 | 0.0 | 5 | 25.0 |
| | Emergency Medical Tech.-Ambulance | 521 | 295 | 816 | 716 | 48 | 6.6 | 81 | 11.3 |
| | Emergency Medical Tech.-Paramedic | 321 | 99 | 420 | 385 | 15 | 3.8 | 34 | 8.8 |
| | Other Ambulance Personnel | 44 | 90 | 134 | 99 | 10 | 10.1 | 3 | 3.0 |
| Ambulance Personnel (Volunteer) | Total | 0 | 587 | 587 | 316 | 23 | 7.1 | 19 | 6.0 |
| | Standard St. John Ambul. Cert. | 0 | 398 | 398 | 214 | 15 | 6.8 | 16 | 7.3 |
| | Advanced St. John Ambul. Cert. | 0 | 34 | 34 | 18 | 1 | 2.9 | 1 | 2.9 |
| | Emergency Medical Tech.-Ambulance | 0 | 83 | 83 | 49 | 8 | 15.3 | 2 | 4.1 |
| | Emergency Medical Tech.-Paramedic | 0 | 1 | 1 | 1 | 0 | 0.0 | 0 | 0.0 |
| | Other Ambulance Personnel | 0 | 71 | 71 | 36 | 0 | 0.0 | 1 | 2.8 |
| Child/Youth Care Personnel | Total | 1,423 | 372 | 1,795 | 1,673 | 64 | 3.8 | 417 | 24.9 |
| | Hospital Child Care Workers | 30 | 11 | 41 | 36 | 0 | 0.0 | 6 | 16.9 |
| | Baccalaureate in Child Care | 16 | 0 | 16 | 18 | 2 | 11.1 | 3 | 16.7 |
| | Related Baccalaureate or Masters | 284 | 46 | 330 | 316 | 9 | 2.8 | 95 | 29.9 |
| | Child/Youth Care (Diploma) | 284 | 47 | 331 | 337 | 29 | 8.6 | 91 | 27.0 |
| | Child/Youth Care (Related Diploma) | 307 | 49 | 356 | 334 | 2 | 0.6 | 80 | 23.8 |
| | Child/Youth Care (Unrelated Diploma) | 95 | 29 | 124 | 114 | 4 | 3.5 | 20 | 17.2 |
| | Child/Youth Care Workers (Other) | 328 | 142 | 470 | 412 | 13 | 3.0 | 101 | 24.5 |
| | Houseparents | 79 | 48 | 127 | 109 | 6 | 5.1 | 22 | 20.3 |
| Day Care Personnel | Total | 5,416 | 1,154 | 6,570 | 6,188 | 195 | 3.2 | 2,335 | 37.7 |
| | Director (B.Ed. Child Educ.) | 81 | 5 | 86 | 87 | 3 | 3.5 | 19 | 22.0 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Day Care Personnel | Director (Diploma Child Educ.) | 143 | 7 | 150 | 153 | 6 | 3.9 | 18 | 11.8 |
| | Director (Cert. Child Educ.) | 120 | 2 | 122 | 124 | 3 | 2.4 | 16 | 12.5 |
| | Director (Other Day Care Cert.) | 56 | 1 | 57 | 59 | 3 | 4.2 | 3 | 5.1 |
| | Director (Related Degree/Diploma) | 118 | 10 | 128 | 123 | 0 | 0.0 | 10 | 8.1 |
| | Director (Unrelated Degree) | 50 | 3 | 53 | 53 | 1 | 1.9 | 10 | 19.0 |
| | Director (Other) | 214 | 12 | 226 | 222 | 2 | 0.9 | 29 | 12.8 |
| | Child Care Worker (B.Ed. Child Educ.) | 132 | 16 | 148 | 142 | 2 | 1.4 | 61 | 43.0 |
| | Child Care Worker (Diploma Child Educ.) | 558 | 32 | 590 | 609 | 35 | 5.7 | 150 | 24.6 |
| | Child Care Worker (Cert. Child Educ.) | 389 | 33 | 422 | 438 | 33 | 7.4 | 131 | 29.8 |
| | Child Care Worker (Other Day Care Cert.) | 195 | 10 | 205 | 207 | 7 | 3.4 | 42 | 20.0 |
| | Child Care Worker (Related Degree/Dip.) | 273 | 38 | 311 | 296 | 4 | 1.4 | 55 | 18.6 |
| | Child Care Worker (Unrelated Degree) | 208 | 39 | 247 | 232 | 4 | 1.7 | 102 | 43.8 |
| | Child Care Worker (Other) | 2,879 | 946 | 3,825 | 3,446 | 94 | 2.7 | 1,692 | 49.1 |
| Correctional Personnel | Total | 1,907 | 90 | 1,997 | 1,997 | 45 | 2.3 | 89 | 4.5 |
| | Correctional Service Worker | 586 | 15 | 601 | 600 | 6 | 1.0 | 26 | 4.3 |
| | Correctional Officer/Security Guard | 1,321 | 75 | 1,396 | 1,398 | 39 | 2.8 | 64 | 4.5 |
| Dental Assistants | Total | 1,847 | 471 | 2,318 | 2,181 | 98 | 4.5 | 393 | 18.0 |
| | On-the-job-trained | 483 | 156 | 639 | 569 | 8 | 1.4 | 115 | 20.1 |
| | Certified with intra-oral training | 1,232 | 288 | 1,520 | 1,460 | 84 | 5.7 | 262 | 17.9 |
| | Certified without intra-oral training | 132 | 27 | 159 | 152 | 7 | 4.3 | 17 | 11.2 |
| Dental Hygienists | Total | 379 | 401 | 780 | 711 | 132 | 18.5 | 99 | 13.9 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Dental Hygienists | Dental Hygienist | 379 | 401 | 780 | 711 | 132 | 18.5 | 99 | 13.9 |
| Dental Technicians | Total | 556 | 52 | 608 | 615 | 33 | 5.4 | 74 | 12.0 |
| | Registered Dental Tech. | 159 | 10 | 169 | 175 | 11 | 6.3 | 10 | 5.7 |
| | Non-Registered Dental Tech. | 397 | 42 | 439 | 440 | 22 | 5.0 | 64 | 14.4 |
| Denturists | Total | 231 | 17 | 248 | 242 | 3 | 1.0 | 27 | 11.0 |
| | Certified Denturist | 184 | 11 | 195 | 192 | 2 | 1.0 | 12 | 6.0 |
| | Non-Certified Denturist | 47 | 6 | 53 | 51 | 1 | 1.0 | 15 | 29.7 |
| Dietary Personnel | Total | 2,159 | 2,234 | 4,393 | 3,359 | 83 | 2.5 | 413 | 12.3 |
| | Dietary Technologist | 202 | 115 | 317 | 264 | 5 | 1.7 | 30 | 11.4 |
| | Food Service Worker | 1,456 | 1,866 | 3,322 | 2,456 | 67 | 2.7 | 317 | 12.9 |
| | Dietitian | 188 | 111 | 299 | 250 | 7 | 2.6 | 34 | 13.4 |
| | Nutritionist | 20 | 11 | 31 | 27 | 1 | 3.8 | 1 | 1.9 |
| | Other Dietary Personnel | 293 | 131 | 424 | 363 | 5 | 1.2 | 32 | 8.7 |
| Eye Care Personnel | Total | 978 | 251 | 1,229 | 1,153 | 50 | 4.3 | 164 | 14.2 |
| | Ophthalmic Dispensers (Certified) | 394 | 53 | 447 | 435 | 14 | 3.2 | 57 | 13.0 |
| | Ophthalmic Dispensers (Non-Certified) | 305 | 70 | 375 | 358 | 18 | 5.0 | 59 | 16.5 |
| | Ophthalmic Assistants | 69 | 24 | 93 | 87 | 6 | 6.4 | 15 | 17.3 |
| | Optometric Assistants | 206 | 92 | 298 | 263 | 11 | 4.2 | 32 | 12.0 |
| | Orthoptists | 4 | 12 | 16 | 11 | 1 | 9.1 | 2 | 13.6 |
| Health Records Personnel | Total | 651 | 258 | 909 | 802 | 22 | 2.7 | 77 | 9.5 |
| | Health/Medical Records Adm./Librarian | 134 | 22 | 156 | 156 | 11 | 7.1 | 15 | 9.6 |
| | Health/Medical Record Tech. | 250 | 106 | 356 | 308 | 5 | 1.5 | 26 | 8.5 |
| | Medical Dicta-Typist/Transcriptionist | 220 | 107 | 327 | 280 | 7 | 2.3 | 33 | 11.8 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Health Records Personnel | Other Health Care Records Personnel | 47 | 23 | 70 | 59 | 0 | 0.0 | 3 | 4.3 |
| Home Care Personnel | Total | 440 | 1,573 | 2,013 | 1,294 | 68 | 5.2 | 249 | 19.2 |
| | Homemakers | 229 | 929 | 1,158 | 729 | 35 | 4.8 | 172 | 23.5 |
| | Homehelpers | 98 | 369 | 467 | 296 | 13 | 4.4 | 31 | 10.5 |
| | Personal Care Attendants | 113 | 275 | 388 | 270 | 20 | 7.2 | 47 | 17.2 |
| Lab/X-Ray/Diag/Therapeutic Personnel | Total | 4,294 | 1,804 | 6,098 | 5,345 | 149 | 2.8 | 585 | 10.9 |
| | Combined Lab/X-Ray Tech. | 190 | 176 | 366 | 289 | 11 | 3.6 | 43 | 14.9 |
| | Medical Lab. Scientist | 56 | 2 | 58 | 59 | 2 | 3.4 | 7 | 11.0 |
| | Medical Lab. Tech. | 2,000 | 770 | 2,770 | 2,437 | 52 | 2.1 | 245 | 10.0 |
| | Medical Lab. Asst./Aide | 608 | 279 | 887 | 769 | 21 | 2.7 | 99 | 12.8 |
| | Electroencephalographic (EEG) Tech. | 29 | 19 | 48 | 39 | 1 | 1.3 | 5 | 11.5 |
| | Respiratory Therapist | 391 | 121 | 512 | 480 | 29 | 5.9 | 59 | 12.3 |
| | Electrocardiographic (ECG/EKG) Tech. | 78 | 15 | 93 | 87 | 1 | 1.2 | 6 | 6.9 |
| | Dialysis Tech. | 16 | 0 | 16 | 16 | 0 | 0.0 | 0 | 0.0 |
| | Orthopaedic Asst./Tech. | 22 | 3 | 25 | 24 | 0 | 0.0 | 0 | 0.0 |
| | Medical Radiation Tech. | 574 | 344 | 918 | 761 | 15 | 1.9 | 87 | 11.4 |
| | Nuclear Medicine Tech. | 74 | 18 | 92 | 85 | 2 | 2.4 | 8 | 8.8 |
| | Radiation Oncology Tech. | 43 | 11 | 54 | 51 | 3 | 4.9 | 9 | 16.7 |
| | Diagnostic Medical Sonograhers | 131 | 30 | 161 | 152 | 6 | 3.9 | 15 | 9.5 |
| | Other Lab./X-Ray Personnel | 82 | 16 | 98 | 98 | 8 | 8.2 | 6 | 5.6 |
| Registered Nursing Personnel | Total | 11,181 | 7,971 | 19,152 | 15,961 | 794 | 5.0 | 2,025 | 12.7 |
| | Intensive Care Unit | 878 | 515 | 1,393 | 1,226 | 90 | 7.3 | 143 | 11.7 |
| | Operating Room | 434 | 291 | 725 | 592 | 12 | 2.0 | 76 | 12.8 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Registered Nursing Personnel | Recovery Room | 83 | 90 | 173 | 130 | 2 | 1.5 | 5 | 3.8 |
| | Intravenous Therapy | 36 | 51 | 87 | 64 | 3 | 3.9 | 4 | 6.2 |
| | Medical/Surgical | 2,385 | 2,033 | 4,418 | 3,601 | 200 | 5.5 | 624 | 17.3 |
| | Maternal/Child | 358 | 310 | 668 | 531 | 18 | 3.4 | 56 | 10.5 |
| | Emergency Room | 303 | 310 | 613 | 476 | 18 | 3.7 | 82 | 17.2 |
| | Psychiatric Ward | 581 | 241 | 822 | 773 | 71 | 9.2 | 130 | 16.8 |
| | Pediatrics | 338 | 257 | 595 | 492 | 26 | 5.2 | 79 | 16.0 |
| | Nursing Education | 815 | 260 | 1,075 | 982 | 37 | 3.8 | 69 | 7.0 |
| | Administration | 1,786 | 246 | 2,032 | 1,981 | 72 | 3.6 | 156 | 7.9 |
| | Community/Public Health | 548 | 261 | 809 | 695 | 16 | 2.3 | 90 | 13.0 |
| | Home Care | 299 | 317 | 616 | 463 | 6 | 1.2 | 31 | 6.6 |
| | Offices and Clinics | 326 | 383 | 709 | 529 | 12 | 2.2 | 85 | 16.0 |
| | RN - Other | 206 | 158 | 364 | 295 | 10 | 3.4 | 18 | 5.9 |
| | Occupational/Staff Health | 162 | 75 | 237 | 205 | 6 | 2.7 | 24 | 11.5 |
| | Labor Delivery/Recovery Suite | 190 | 177 | 367 | 285 | 7 | 2.3 | 29 | 10.2 |
| | Short Stay Unit | 92 | 57 | 149 | 131 | 10 | 7.7 | 6 | 4.6 |
| | Long Term Care/Rehabilitation | 772 | 1,164 | 1,936 | 1,467 | 113 | 7.7 | 200 | 13.6 |
| | Out-Patient Services | 199 | 174 | 373 | 300 | 14 | 4.7 | 20 | 6.5 |
| | General Duty | 390 | 601 | 991 | 747 | 56 | 7.5 | 103 | 13.8 |
| Non-RN Nursing Personnel | Total | 6,124 | 4,971 | 11,095 | 8,869 | 260 | 2.9 | 1,187 | 13.4 |
| | Graduate Nurse | 100 | 71 | 171 | 136 | 0 | 0.0 | 54 | 39.9 |
| | Registered Psychiatric Nurse | 531 | 165 | 696 | 656 | 43 | 6.5 | 64 | 9.8 |
| | Registered Nursing Asst./Orderly | 2,496 | 2,172 | 4,668 | 3,694 | 112 | 3.0 | 399 | 10.8 |
| | Operating Room Tech. | 59 | 40 | 99 | 84 | 5 | 6.0 | 7 | 8.3 |
| | Other Nursing Staff | 2,702 | 2,414 | 5,116 | 3,985 | 76 | 1.9 | 616 | 15.5 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Non-RN Nursing Personnel | Porter | 236 | 109 | 345 | 315 | 25 | 7.8 | 47 | 14.8 |
| Occupational Health Personnel | Total | 110 | 6 | 116 | 121 | 8 | 6.2 | 8 | 6.6 |
| | Occupational Hygienist | 52 | 5 | 57 | 58 | 4 | 6.0 | 5 | 8.6 |
| | Occupational Hygienist Tech. | 58 | 1 | 59 | 63 | 4 | 6.4 | 3 | 4.8 |
| Pharmaceutical Personnel | Total | 1,923 | 1,059 | 2,982 | 2,555 | 102 | 4.0 | 242 | 9.5 |
| | Pharmacist | 1,466 | 774 | 2,240 | 1,936 | 83 | 4.3 | 184 | 9.5 |
| | Pharmacy Asst./Tech. | 423 | 279 | 702 | 581 | 18 | 3.1 | 58 | 10.0 |
| | Other Pharmaceutical Personnel | 34 | 6 | 40 | 38 | 1 | 2.6 | 1 | 1.3 |
| Psychological Personnel | Total | 1,059 | 616 | 1,675 | 1,424 | 57 | 4.0 | 82 | 5.7 |
| | Psychologist | 721 | 407 | 1,128 | 973 | 49 | 5.0 | 48 | 4.9 |
| | Psychological Asst. | 52 | 49 | 101 | 80 | 4 | 4.4 | 7 | 8.8 |
| | Other Psych./Social/Counsellor/Therapist | 286 | 160 | 446 | 371 | 5 | 1.2 | 27 | 7.3 |
| Public Health Personnel | Total | 236 | 21 | 257 | 258 | 11 | 4.3 | 19 | 7.2 |
| | Public Health Inspector | 117 | 9 | 126 | 131 | 9 | 6.9 | 7 | 5.4 |
| | Community Health Rep./Worker | 119 | 12 | 131 | 127 | 2 | 1.6 | 12 | 9.1 |
| Rehabilitation Therapy Personnel | Total | 4,828 | 1,858 | 6,686 | 6,151 | 394 | 6.4 | 1,024 | 16.6 |
| | Occupational Therapist | 321 | 144 | 465 | 462 | 69 | 14.9 | 91 | 19.6 |
| | Occupational Therapy Asst./Aide | 132 | 30 | 162 | 150 | 3 | 1.7 | 11 | 7.4 |
| | Physical Therapist | 693 | 361 | 1,054 | 1,019 | 146 | 14.3 | 179 | 17.5 |
| | Other Physical Therapy Personnel | 189 | 118 | 307 | 254 | 6 | 2.2 | 53 | 20.7 |
| | Speech Pathologist/Therapist | 242 | 76 | 318 | 325 | 45 | 13.8 | 35 | 10.6 |
| | Speech Pathologist Asst./Aide | 28 | 60 | 88 | 61 | 3 | 4.9 | 1 | 1.6 |
| | Clinical Audiologist | 23 | 13 | 36 | 32 | 2 | 6.3 | 2 | 6.3 |
| | Audiometric Tech. | 15 | 13 | 28 | 22 | 0 | 0.0 | 1 | 4.7 |

(CONTINUED)

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

APPENDIX 2. HEALTH AND SOCIAL SERVICE PERSONNEL OCCUPATIONAL DATA--MARCH 31, 1990*

| | | FULL-TIME PERSONNEL | PART-TIME PERSONNEL | TOTAL PERSONNEL | FTE POSITIONS | FTE VACANT POSITIONS | VACANCY RATE (%) | FTE RESIGNATIONS | TURNOVER RATE (%) |
|---|---|---|---|---|---|---|---|---|---|
| Rehabilitation Therapy Personnel | Recreational Therapy Asst./Aide | 255 | 134 | 389 | 328 | 6 | 1.8 | 54 | 16.3 |
| | Prosthetist/Orthotist | 24 | 2 | 26 | 28 | 3 | 10.7 | 7 | 25.0 |
| | Prosthetic and Orthotic Clinicians/Techs | 39 | 3 | 42 | 43 | 2 | 4.7 | 3 | 7.1 |
| | Rehabilitation Practitioner | 1,055 | 341 | 1,396 | 1,276 | 51 | 4.0 | 288 | 22.5 |
| | Remedial Gymnast | 9 | 1 | 10 | 10 | 0 | 0.0 | 0 | 0.0 |
| | Recreational Therapist | 256 | 59 | 315 | 293 | 7 | 2.4 | 33 | 11.3 |
| | Rehabilitation Aide | 1,435 | 489 | 1,924 | 1,723 | 43 | 2.5 | 246 | 14.3 |
| | Other Rehabilitation Personnel | 112 | 14 | 126 | 129 | 10 | 7.8 | 23 | 17.4 |
| Social Service Personnel | Total | 480 | 95 | 575 | 551 | 24 | 4.3 | 65 | 11.8 |
| | Social Service Aide | 84 | 35 | 119 | 111 | 9 | 8.1 | 13 | 11.8 |
| | Alcoholism/Addiction Counsellor | 329 | 38 | 367 | 360 | 12 | 3.2 | 49 | 13.5 |
| | Life Skills Coach | 67 | 22 | 89 | 81 | 3 | 3.7 | 4 | 4.3 |
| Social Work Personnel | Total | 2,486 | 287 | 2,773 | 2,743 | 113 | 4.1 | 234 | 8.5 |
| | Master's of Social Work | 414 | 65 | 479 | 476 | 30 | 6.2 | 34 | 7.1 |
| | Related Master's Degree | 88 | 20 | 108 | 100 | 2 | 2.0 | 10 | 9.5 |
| | Bachelor's of Social Work | 823 | 90 | 913 | 902 | 34 | 3.7 | 88 | 9.7 |
| | Unrelated Master's/Bachelor's Degree | 365 | 37 | 402 | 401 | 17 | 4.2 | 25 | 6.2 |
| | Other Social Worker | 417 | 50 | 467 | 462 | 20 | 4.3 | 42 | 9.1 |
| | Social Services Diploma | 379 | 25 | 404 | 403 | 11 | 2.7 | 36 | 8.9 |
| Program Administration/Clerical Support | Total | 6,830 | 2,069 | 8,899 | 8,027 | 162 | 2.0 | 754 | 9.4 |
| | Administrative Support (Clerical) | 5,454 | 1,926 | 7,380 | 6,535 | 118 | 1.8 | 652 | 10.0 |
| | Program Administrator | 1,376 | 143 | 1,519 | 1,492 | 44 | 3.0 | 103 | 6.9 |
| Other Health Care/Service Personnel | Total | 346 | 132 | 478 | 429 | 17 | 4.0 | 40 | 9.3 |
| | Other Health and Social Service | 346 | 132 | 478 | 429 | 17 | 4.0 | 40 | 9.3 |

*Definitions for FTE POSITIONS, VACANCY RATES, and TURNOVER RATES are given on page 36.

## Appendix 2

**Definition of Terms**

1. Full-time Equivalent Positions (FTE):

   FTE Positions = $\left(\text{full-time} + \frac{\text{part-time}}{2}\right)$ number of personnel employed + $\left(\text{full-time} + \frac{\text{part-time}}{2}\right)$ number of vacancies.

2. Full-time Equivalent Vacant Positions:

   FTE Vacant Positions = $\left(\text{full-time} + \frac{\text{part-time}}{2}\right)$ number of vacancies.

3. Vacancy Rate =

   $$\frac{\text{number of full-time equivalent vacant positions}}{\text{number of full-time equivalent positions}} \times 100$$

4. Full-time Equivalent Resignations:

   FTE Resignations = $\left(\text{full-time} + \frac{\text{part-time}}{2}\right)$ number of resignations.

5. Turnover Rate:

   $$\frac{\text{number of full-time equivalent resignations}}{\text{number of full-time equivalent positions}} \times 100$$

APPENDIX 3

CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990:
NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| TOTAL | | 10,251 | 8,947 | 466,182 | 52.1 | 3,885 |
| Child/Youth Care Personnel | Total | 285 | 280 | 19,116 | 68.3 | 159 |
| | Hospital Child Care Workers | 3 | 3 | 415 | 138.3 | 3 |
| | Related Baccalaureate or Masters | 16 | 16 | 934 | 58.4 | 8 |
| | Child/Youth Care (Diploma) | 14 | 14 | 266 | 19.0 | 2 |
| | Child/Youth Care (Related Diploma) | 1 | 1 | 68 | 68.0 | 1 |
| | Child/Youth Care (Unrelated Diploma) | 3 | 3 | 53 | 17.7 | 0 |
| | Child/Youth Care Workers (Other) | 227 | 224 | 9,918 | 44.3 | 83 |
| | Houseparents | 21 | 19 | 7,462 | 392.7 | 62 |
| Day Care Personnel | Total | 17 | 17 | 1,796 | 105.6 | 15 |
| | Child Care Worker (Other) | 17 | 17 | 1,796 | 105.6 | 15 |
| Correctional Personnel | Total | 82 | 82 | 6,676 | 81.4 | 56 |
| | Correctional Service Worker | 27 | 27 | 1,919 | 71.1 | 16 |
| | Correctional Officer/Security Guard | 55 | 55 | 4,757 | 86.5 | 40 |
| Dental Assistants | Total | 83 | 81 | 2,799 | 34.6 | 23 |
| | On-the-job-trained | 10 | 10 | 332 | 33.2 | 3 |
| | Certified with intra-oral training | 71 | 69 | 2,211 | 32.0 | 18 |

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*The survey form given to day care centres, ambulance operators, and post-secondary institutions did not include the section on casual/contract/temporary/relief personnel.
**The total number of casual hours were converted to the equivalent number of workers working full-time for one month. In the computation, the total number of hours worked by casual personnel was divided by the monthly hours worked by one full-time worker (120 hours - based on a 30 hour week).

APPENDIX 3
CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990
NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| Dental Assistants | Certified without intra-oral training | 2 | 2 | 256 | 128.0 | 2 |
| Dental Hygienists | Total | 99 | 99 | 3,511 | 35.5 | 29 |
| | Dental Hygienist | 99 | 99 | 3,511 | 35.5 | 29 |
| Dental Technicians | Total | 3 | 2 | 165 | 82.5 | 1 |
| | Registered Dental Tech. | 3 | 2 | 165 | 82.5 | 1 |
| Dietary Personnel | Total | 357 | 274 | 18,180 | 66.4 | 152 |
| | Dietary Technologist | 5 | 1 | 86 | 86.0 | 1 |
| | Dietary Aide/Service Worker | 265 | 218 | 15,139 | 69.4 | 126 |
| | Dietitian | 48 | 43 | 2,215 | 51.5 | 18 |
| | Nutritionist | 6 | 6 | 294 | 49.0 | 2 |
| | Other Dietary Personnel | 33 | 6 | 446 | 74.3 | 4 |
| Eye Care Personnel | Total | 8 | 8 | 154 | 19.3 | 1 |
| | Ophthalmic Dispensers (Certified) | 1 | 1 | 10 | 10.0 | 0 |
| | Ophthalmic Dispensers (Non-Certified) | 2 | 2 | 39 | 19.5 | 0 |
| | Ophthalmic Assistants | 3 | 3 | 24 | 8.0 | 0 |
| | Optometric Assistants | 0 | 0 | 20 | 0 | 0 |
| | Orthoptists | 2 | 2 | 61 | 30.5 | 1 |
| Health Records Personnel | Total | 11 | 11 | 859 | 78.1 | 7 |

(CONTINUED)

*The survey form given to day care centres, ambulance operators, and post-secondary institutions did not include the section on casual/contract/temporary/relief personnel.
**The total number of casual hours were converted to the equivalent number of workers working full-time for one month. In the computation, the total number of hours worked by casual personnel was divided by the monthly hours worked by one full-time worker (120 hours - based on a 30 hour week).

APPENDIX 3
CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990:
NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| Health Records Personnel | Health/Medical Record Tech. | 5 | 5 | 310 | 62.0 | 3 |
| | Medical Dicta-Typist/Transcriptionist | 4 | 4 | 306 | 76.5 | 3 |
| | Other Health Care Records Personnel | 2 | 2 | 243 | 121.5 | 2 |
| Home Care Personnel | Total | 269 | 250 | 13,045 | 52.2 | 109 |
| | Homemakers | 202 | 185 | 7,801 | 42.2 | 65 |
| | Homehelpers | 29 | 29 | 2,342 | 80.8 | 20 |
| | Personal Care Attendants | 38 | 36 | 2,902 | 80.6 | 24 |
| Lab/X-Ray/Diag/Therapeutic Personnel | Total | 254 | 230 | 12,882 | 56.0 | 107 |
| | Combined Lab/X-Ray Tech. | 31 | 25 | 756 | 30.2 | 6 |
| | Medical Lab. Tech. | 94 | 81 | 4,440 | 54.8 | 37 |
| | Medical Lab. Asst.\Aide | 36 | 35 | 1,928 | 55.1 | 16 |
| | Respiratory Therapist | 19 | 19 | 174 | 9.2 | 1 |
| | Electrocardiographic (ECG/EKG) Tech. | 3 | 1 | 8 | 8.0 | 0 |
| | Radiographic (X-Ray) Tech. | 66 | 64 | 5,375 | 84.0 | 45 |
| | Nuclear Medicine Tech. | 1 | 1 | 14 | 14.0 | 0 |
| | Diagnostic Medical Sonograhers | 1 | 1 | 136 | 136.0 | 1 |
| | Other Lab./X-Ray Personnel | 3 | 3 | 51 | 17.0 | 0 |

(CONTINUED)

*The survey form given to day care centres, ambulance operators, and post-secondary institutions did not include the section on casual/contract/temporary/relief personnel.
**The total number of casual hours were converted to the equivalent number of workers working full-time for one month. In the computation, the total number of hours worked by casual personnel was divided by the monthly hours worked by one full-time worker (120 hours - based on a 30 hour week).

APPENDIX 3
CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990:
NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| Registered Nursing Personnel | Total | 4,699 | 3,990 | 165,472 | 41.5 | 1,379 |
| | Registered Nurses | 4,699 | 3,990 | 165,472 | 41.5 | 1,379 |
| Non-RN Nursing Personnel | Total | 2,509 | 2,185 | 128,443 | 58.8 | 1,070 |
| | Graduate Nurse | 21 | 21 | 1,057 | 50.3 | 9 |
| | Registered Psychiatric Nurse | 66 | 66 | 4,461 | 67.6 | 37 |
| | Registered Nursing Asst./Orderly | 1,321 | 1,122 | 55,728 | 49.7 | 464 |
| | Operating Room Tech. | 4 | 4 | 30 | 7.5 | 0 |
| | Other Nursing Staff | 1,086 | 962 | 66,345 | 69.0 | 553 |
| | Mental Deficiency Nurse | 1 | 1 | 31 | 31.0 | 0 |
| | Porter | 10 | 9 | 791 | 87.9 | 7 |
| Occupational Health Personnel | Total | 5 | 4 | 235 | 58.7 | 2 |
| | Occupational Hygienist | 2 | 1 | 15 | 15.0 | 0 |
| | Occupational Hygienist Tech. | 3 | 3 | 220 | 73.3 | 2 |
| Pharmaceutical Personnel | Total | 225 | 215 | 12,775 | 59.4 | 106 |
| | Pharmacist | 216 | 206 | 11,982 | 58.2 | 100 |
| | Pharmacy Asst./Tech. | 9 | 9 | 793 | 88.1 | 7 |
| Psychological Personnel | Total | 124 | 110 | 3,792 | 34.5 | 32 |
| | Psychologist | 89 | 77 | 2,955 | 38.4 | 25 |
| | Psychological Asst. | 2 | 2 | 28 | 14.0 | 0 |

(CONTINUED)

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**The total number of casual hours were converted to the equivalent number of workers working full-time for one month. In the computation, the total number of hours worked by casual personnel was divided by the monthly hours worked by one full-time worker (120 hours - based on a 30 hour week).

APPENDIX 3
CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
EMPLOYED BETWEEN MARCH 1, 1990 AND MARCH 31, 1990:
NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| Psychological Personnel | Other Pych./Social/Counsellor/Therapist | 33 | 31 | 809 | 26.1 | 7 |
| Public Health Personnel | Total | 6 | 6 | 795 | 132.5 | 7 |
| | Public Health Inspector | 1 | 1 | 84 | 84.0 | 1 |
| | Community Health Rep./Worker | 5 | 5 | 711 | 142.2 | 6 |
| Rehabilitation Therapy Personnel | Total | 688 | 617 | 33,367 | 54.1 | 278 |
| | Occupational Therapist | 62 | 46 | 1,026 | 22.3 | 9 |
| | Occupational Therapy Asst./Aide | 9 | 9 | 987 | 109.7 | 8 |
| | Physical Therapist | 167 | 146 | 6,342 | 43.4 | 53 |
| | Other Physical Therapy Personnel | 9 | 8 | 629 | 78.6 | 5 |
| | Speech Pathologist/Therapist | 38 | 20 | 503 | 25.1 | 4 |
| | Speech Pathologist Asst./Aide | 6 | 6 | 624 | 104.0 | 5 |
| | Audiometric Tech. | 1 | 1 | 43 | 43.0 | 0 |
| | Recreational Therapy Asst./Aide | 15 | 15 | 965 | 64.3 | 8 |
| | Other Prosthetic and Orthotic Personnel | 1 | 1 | 16 | 16.0 | 0 |
| | Rehabilitation Practitioner | 62 | 52 | 2,185 | 42.0 | 18 |
| | Recreational Therapist | 12 | 11 | 402 | 36.5 | 3 |
| | Rehabilitation Aide | 297 | 297 | 19,313 | 65.0 | 161 |
| | Other Rehabilitation Personnel | 9 | 5 | 332 | 66.4 | 3 |

(CONTINUED)

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APPENDIX 3
CASUAL/CONTRACT/TEMPORARY/RELIEF PERSONNEL
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NUMBER EMPLOYED AND AVERAGE HOURS WORKED BY OCCUPATION
MARCH 31, 1990*

| OCCUPATIONAL GROUP | | # CASUAL WORKERS | # CASUAL WORKERS WITH HOURS REPORTED | TOTAL CASUAL HOURS REPORTED | MEAN HOURS WORKED PER WORKER | CASUAL HOURS CONVERTED TO F-T WORKER** |
|---|---|---|---|---|---|---|
| Social Service Personnel | Total | 33 | 31 | 2,472 | 79.7 | 21 |
| | Social Service Aide | 3 | 3 | 260 | 86.7 | 2 |
| | Alcoholism/Addiction Counsellor | 27 | 27 | 2,152 | 79.7 | 18 |
| | Life Skills Coach | 3 | 1 | 60 | 60.0 | 1 |
| Social Work Personnel | Total | 193 | 179 | 15,908 | 88.9 | 133 |
| | Master's of Social Work | 2 | 2 | 92 | 46.0 | 1 |
| | Bachelor's of Social Work | 3 | 3 | 155 | 51.7 | 1 |
| | Other Social Worker | 184 | 170 | 15,103 | 88.8 | 126 |
| | Social Services Diploma | 4 | 4 | 558 | 139.5 | 5 |
| Program Administration/Clerical Support | Total | 264 | 244 | 20,916 | 85.7 | 174 |
| | Administrative Support (Clerical) | 235 | 215 | 17,676 | 82.2 | 147 |
| | Program Administrator | 29 | 29 | 3,240 | 111.7 | 27 |
| Other Health Care/Service Personnel | Total | 37 | 32 | 2,824 | 88.2 | 24 |
| | Other Health and Social Service | 37 | 32 | 2,824 | 88.2 | 24 |

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